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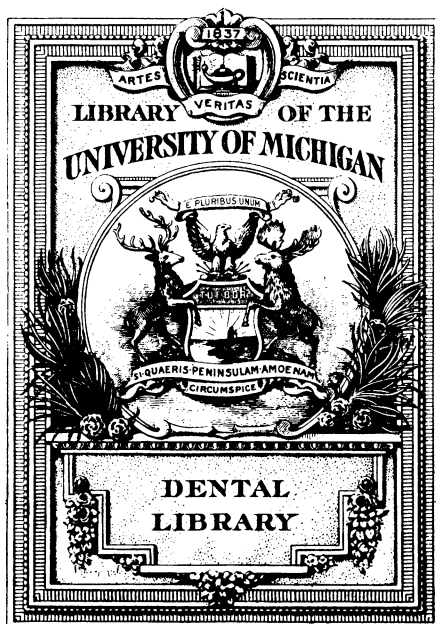
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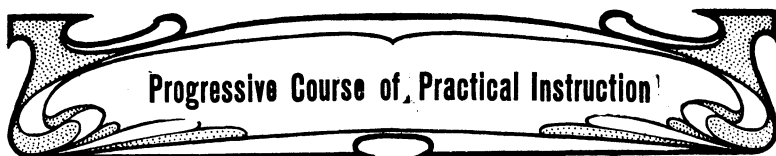
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ORTHODONTIA.

BY J. N. McDOWELL, D. D. S., PROFESSOR OF ORTHODONTIA, COLLEGE OF DENTISTRY, UNIVERSITY OF ILLINOIS.

CHAPTER X.

GOLD PLATING APPLIANCES

After all the appliances are made up, try on and find out if they all fit correctly, then string them all on a wire and boil them in sulphuric acid from one to two minutes, remove and polish outside with fine cuttle-fish disks, inside use brush and pumice, wash in bicarbonate of soda water and then gold plate three or four of the small pieces at a time. To get fine results in gold plating it is necessary to have the bands and appliances highly polished, the plating will look so much better and will last three times as long as it will if the appliances are poorly polished.

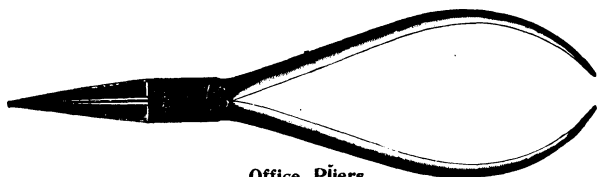
Gold plating today is simplicity itself. Batteries are not necessary. There are a number of gold plating solutions on the market that are perfectly satisfactory. The method is to put about two ounces of the solution in a porcelain basin, warm it over an alcohol lamp, then string the appliances on a wire and dip into the solution and at the same time dip in a piece of zinc. Keep running the zinc back and forth and across the appliances. From about 30 seconds to one minute is about all the time needed.

The writer has used for several years Caulk's Gold Plating solution, sold for \$1.25, and Berry's Liquidized Gold Plating solution, sold for \$1.00. Either are recommended. Caulk's is made in Philadelphia; Berry's is made in Chicago. The solution may be purchased through dental depots. There are full directions on each bottle, which contain enough solution to gold plate a great many regulating appliances.

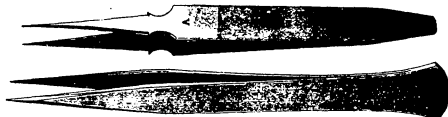
Cementing Bands on. First pack bibulous paper around the teeth, cotton catches in the cement and interferes with the operation, wipe off the teeth with cotton, then dry with air, mix the cement creamy. Fill the band and force it up on the tooth as far as possible with the fingers, keeping one finger on the end of the band so the cement will be forced up ahead of the band, then drive the band well on the tooth with a band driver. Allow cement to harden, then put on the

rest of appliances. If ligature wires are to be used, follow instructions below.

Ligatures to Use. Brass ligature wires, gauge 25, 26 and 29, and rubber ligatures are the most common ligatures used. Brass annealed ligature wire, 26 gauge, is the standard to use; 25 gauge may be used when heavy pressure is desired, and 29 gauge for light pressure or for temporary purposes or when the teeth are sore or



Office Pliers.



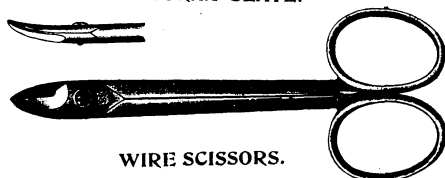
SOLDER PLIERS.



BAND-SOLDERING PLIERS.



BORAX SLATE.



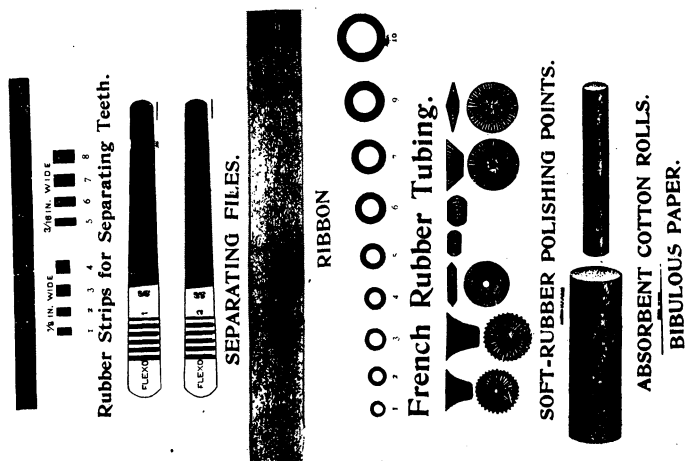
WIRE SCISSORS.

so close together it is impossible to get a heavier wire through. Often, in putting on ligature wires for the first time, the teeth will be found so close together that it is impossible to pass the wire between the teeth. This may be due partially to tartar, rough edges, etc., and it is well to pass a ribbon saw between the teeth first, then file one end of the wire flat and pass it through, between the teeth near the gingival. Sometimes it may be necessary to separate the

teeth a little with the spatula until the wire is started between the teeth; then grasp the end with a heavy pair of pliers and draw it through.

Rubber ligatures can be made from rubber tubing, cutting off small rings of rubber, supplied by dental depots, or they can be made from common rubber elastic, size 003, by punching holes in the rubber with the rubber dam punch and then trimming down to right size.

Twisting Wire Ligature. After passing a wire liagture around the tooth, then over the wire arch make one-half of a twist; this is



sufficient for two reasons. First, sufficient pressure is gained by one twist; and, second, the ends can be bent under the arch without leaving an irritating spur. If twisted several times a spur is left on that will irritate the lip. The wires may be twisted with a flat pair of pliers and then renewed at the next visit. The ends of the wire ligature should be about two millimeters in length, and these ends are bent under and about the arch. Twist the wires with pliers, especially if the teeth are very sore. Place the first finger on the tooth and the thumb on the arch and press gently together. Then with the flat-nose pliers twist the wire until the slack is taken up. To pinch the wire directly without this precaution only hurts the patient and strains the wire.

Putting on Wire Arch. In using any form of wire arch it is necessary to bend the wire to fit the shape of the arch of the mouth. If lateral pressure is desired the wire arch at first is left a trifle wider than the teeth to be expanded and then given a greater lateral pressure later by bending outward. Too heavy lateral pressure at first in many cases does more harm than good, making the teeth so sore it is impossible to close the teeth together in masticating. If lateral pressure is not desired, be certain that the arch is bent so that no lateral pressure is exerted on the molars or anchor teeth. Often a gentle pressure on the anchor teeth will open the anterior bite by throwing the molar out in a few weeks to an angle of 45 degrees before the cause is discovered. It is always best to bend the wire arch with the fingers as much as possible, as this method retains the graceful shape of the arch, and it is not nearly so liable to break on the threaded part as if the pliers are used. The position of the wire arch on the teeth is governed entirely by soldering the tubes on the anchor bands; and the arches should be tried on first for perfect position before cementing the anchor bands on. In soldering on wire arches, when it becomes necessary to solder spurs or staples to the arch and still retain the spring temper of the same, use soft solder. If, however, no spring pressure is required, spurs, loops and pipes can be hard soldered to the arches. Hard solder removes the temper of the arch at the part soldered and its elasticity or spring temper is gone, but the arch is still good for all movement except where spring temper for lateral expansion is needed.

To Remove Bands. In removing plain bands, either on the anterior or distal teeth, two or three methods may be used. Sometimes it is necessary to remove a band to change the position of a spur or tube. To do this without destroying the band loosen the cement from the margins of the band with a small sharp instrument, and then with a pair of flat-nose pliers, one-half of the nose being covered with a piece of rubber tubing, which rests on the tooth, while the other end passes to the lower edge of the band. The rubber prevents chipping of the enamel of the tooth. Another way to remove the bands when not to be used again is to use a small thin-edged wire cutter and slit the band where it is soldered. Another way would be to use the engine with an enamel burr or stone and cut the band loose. The last method is the best when the teeth are very sore.

PROSTHETIC DENTISTRY

By B. J. Cigrand, B. S., M. S., D. D. S.

(Professor of Prosthetic Dentistry and Technics, College of Dentistry,
University of Illinois.)

CHAPTER XXIX.

The prosthetic practitioners are at present eagerly searching for a method whereby porcelain can be attached to bridges without the use of solder. The gold tips are unsightly. Patrons object to this method of shielding the weak porcelain. There is but one avenue of escape—use porcelain in bulk and invent or discover some means of attachment.

For upwards of fifteen years this feature of prosthetic work has engaged my attention and in this direction have met with some degree of success.

We will continue the subject of porcelain anchorage without use of solder until every known method is described.

The diagram relates to my method of effecting natural results in individual and assembled cases. In a college clinic in 1891 I gave Fig. 1 and in 1895 I presented several similar ideas to the Illinois State Dental Society. Fig. 1 shows the old saddle-back tooth mounted on a gold cone having a corrugated ribbon of gold soldered to serve as an anchor for the vulcanite which was the agent of attachment. The crown could also be made by employing solder instead of vulcanite, and it could be made into a full porcelain crown by making the core of platinum and filling the gap with porcelain. Johnston & Lund have since given me a tooth which is considerably stronger than the saddle-back. This tooth is shown in Figs. 2, 3 and 4. They can be had for either vulcanite attachment or gold attachment, as suggested in Figs. 2 and 4, or if a gold pocket or cage is fashioned, cement the case. The molars are porcelain cubes much stronger than the Dr. Harrison's tooth. The molars certainly can endure pressure since the porcelain is in a cubic form and we have learned by sad experiences that porcelain is only strong in bulk. Here we certainly have sufficient mass. Figure 6 shows how the old Howland crown can be used on a gold cone. I have used the vulcanite as a medium of attachment and get good results. The vulcanite is far more durable than most practitioners believe.

In fact I have seen vulcanite dentures which had given service for two score years and did not show wear or disintegration. I have for more than six years used vulcanite in certain bridge cases, especially saddle bridges and as an anchor for porcelain teeth it has merit—but you must know when and how to employ it.

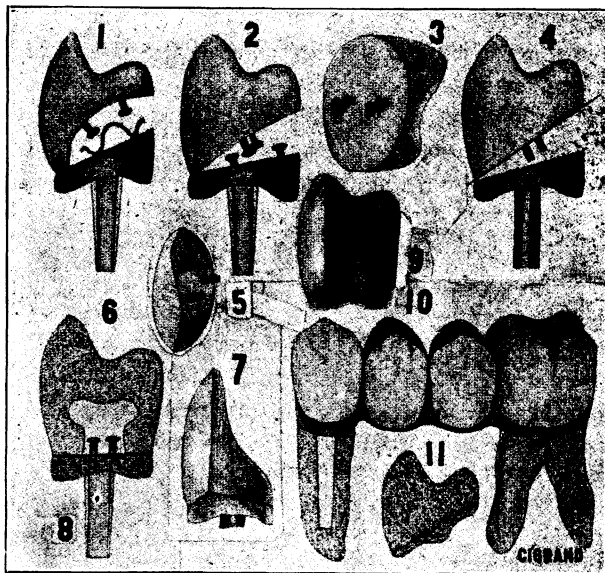
Instead of cementing the Mason detachable tooth, put mouldable rubber in the space, put bridge in vulcanizer and you get a truly perfect fit and durable case. I have for years advocated vulcanite and cement in definite cases and am certain that practitioners will find this method practical and safe.

In 1895 I had a tooth finished of cubic form, well supplied with porcelain under the buccal cusp, with the pin directed toward the thickest portion. This tooth was furnished me by Johnson & Lund and I use now and flow in gold and get excellent results. I have used more than a hundred and fifty of them, and I shall continue to use them until I find something better for individual cases. It is more adjustable than a Logan crown, although I make my band and build my tooth upon the cope. When you do it by this system, you are compelled to make the dental appliance according to the foundation already laid. I lay my own foundation and build accordingly.

In 1900 I read a paper before the Chicago Dental Society advocating vulcanite and cement in definite cases and at that meeting Dr. W. V. B. Ames, who has had a wide experience with cements, had this to say: "I want to go on record as saying that when a piece of porcelain is set into a box, which gives it support and surrounds its base entirely and cemented therein, dentists are not justified in calling it a temporary and weak attachment. If they had cemented as many pieces of porcelain in such boxes as I have, and seen them last for many years, and as Drs. Taggart and Hunt have seen them, they would not make such statements. Where a piece of porcelain is beveled against an inclining surface (it is not really a matrix because it does not sufficiently surround) and expected to be held by the cement, they may be justified in making such statements; but if they set it in a matrix which is really a matrix, the cement will hold it a dozen or twenty years, and that is a good average life for an appliance."

Dr. Roach who has given us a detachable tooth said this in the discussion on my method.

"The method devised by Dr. Cigrand of using a tooth cut away on the lingual surface, with pins baked in for the attachment of



the solder, is a very simple and effective way of making a molar or bicuspid crown without the display of any gold.

The Mason method has some good features, but on the whole I do not like it. My objections are, that it is necessary to invest the several parts of the crown before soldering, that the rigid attachment of porcelain to backing weakens the porcelain, and the clumsy, unfinished appearance when completed."

In bridge cases this tooth is especially valuable; the case will require less gold and the completed substitute will be firm and rigid. The gold on the intermediate teeth is readily re-enforced by placing a bar of gold or a bar of iridio-platinum under the backing and then soldering same to backing and to the mesial and disal anchors.

The simplicity of this method has induced me to bring it before the profession. Such of the practitioners as have employed the teeth have found them serviceable and aesthetic.

(To be Continued.)

DENTAL THERAPEUTICS

(By Geo. W. Cook, B. S., D. D. S., Chicago, Ill., Professor of Bacteriology and Pathology, University of Illinois, Professor of Oral Surgery, Dearborn Medical College.)

CHAPTER XXX.

Among some of the interesting agents that are used in therapeutics is a large number of the ethereal oils, some of which seem to belong to the methane series. The oil of turpentine is one of the products classed among the last named group of hydrocarbon compounds, and those containing large portions of terpenes with a small quantity of oxygen in combination are looked upon as the group of the methane series which penetrate deeply and are extremely irritating.

Turpentine is but little used as a therapeutic agent internally, for the simple fact that there are many agents to take its place for internal administration with less harm as a local irritant for many of the things for which turpentine was considered a useful remedy; however, for external use as a rubefacient it is usually preferred to that of mustard or cantharidin. Turpentine penetrates much more deeply into the tissues of the body without producing irritation than the other two remedies just mentioned. The oil of turpentine is frequently used externally in swollen and painful rheumatic conditions of the joints. Its application in these cases is usually made by wringing flannel cloths out of hot water and then dropping oil of turpentine over the surface of this cloth, and then applying it to the surface where the pain and swollen condition appears. It will many times relieve the acute and swelling condition when used in the manner just described, and especially in the eruption of the third molar teeth where there frequently happens to be a condition that the patient describes as one where there is a stiffening of the movements of the lower jaw. In these cases there is an inflammation of the periosteum, and especially that portion where the attachment of the muscles takes place which produces a kind of rigidity of the involuntary muscular fibers. In such cases the turpentine with its penetrating power can be applied with a great deal of relief, at least for the time being, and has the preference to that of most all other remedies. Patients frequently appeal to dentists in those cases without getting much relief. The argument might be put forth that the heat from the hot application would produce the same effect; in some cases this might be true, but in the majority of cases the turpentine might be added with great benefit,

simply because of its power to penetrate more deeply and effecting the blood supply to the part.

The observation has been made that turpentine is a more effectual antiseptic agent than almost any of the so-called ethereal oil series, and on this account it has been quite extensively used in tuberculosis and various other affections of the lung tissue. Various kinds of applications in chronic inflammatory conditions of the tissue have been advised, but none is so effectual as that of spraying the agent into the air passages of the lung.

Tubercular patients are frequently advised to make their homes in the locality of coniferous forests, where it is supposed that the atmosphere is more or less charged with some of these terpene groups, and thereby the patient will inhale with very beneficial results some of these agents and become very much relieved, and even permanent cures have been reported. But as a matter of fact the benefit derived from the entrance into the lungs of any of these terpenes is a question that has by no means been satisfactorily settled.

Oil of turpentine has been added to baths in order to bring about a slight stimulation to the skin, which is looked upon as being very beneficial in certain skin diseases. In Germany the pine needles have had considerable reputation when added to water for the purpose of bathing, especially in all sorts of skin eruptions. However, in these cases it is very much like that of the patient living in the forest for the purpose of getting the terpenes into the body as a remedy for disease.

The internal use of the oil of turpentine dates far back into the history of medicine, and its use internally as a vermifuge has come down to the present generation. It is doubtlessly used in many places for this purpose at the present time. Those who have had the good fortune to live away from the reach of the "appendicitis fad doctors" have no doubt been relieved of many a case of appendicitis by the use of castor oil and oil of turpentine—most of us can taste that stuff yet. The vast majority of all intestinal trouble is the result of putrefactive changes that are going on in the intestinal tract, and a large majority of the cases of appendicitis are nothing more or less than small particles of impacted feces getting into the appendix vermiformes. It is easy to see what a beneficial remedy the oil of turpentine is in such intestinal difficulties, for there is just enough irritating power to cause the tissues of the intestinal tract to quickly respond to an activity capable of throwing off the waste products present and arrest the putrefactive changes which are going on in this locality. The use of oil of turpentine in typhoid fever has been highly recommended in some instances, but there is a question as

to its value and is no longer considered of any special value by the so-called learned doctors of today.

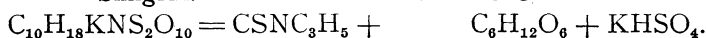
The use of turpentine and the juniper are considered of value as diuretics, but their administration should be withheld where there is only a slight irritation of the kidneys because they are liable to produce a serious complication of the kidneys and a serious inflammation following their use in such conditions.

The oil of turpentine was at one time considered of much value in phosphorus poisoning, simply from the fact that it was believed that it would absorb enough of the oxygen of the air from the tissues to produce ozone, as it was supposed to oxidize phosphorus and in this way arrest the poisonous action of phosphorus in the stomach and intestines. But investigations have proven that neither ozone nor peroxide of hydrogen was capable of being produced or to become a chemical constituent of turpentine.

Along in this group we might mention mustard. There are two kinds of mustard, black mustard, *sinapis nigra*, and the white mustard, *sinapis alba*. Investigations have shown that black mustard contains glucoside, potassium myronate or sinigrin and a ferment, myrosin, which decomposes it in water into dextrose, potassium bisulphate and ally-issosulphocyanate. The last named compound is a volatile oil of mustard a chemical reaction which may be written in the following manner :

Sinigrin.

Volatile Oil.

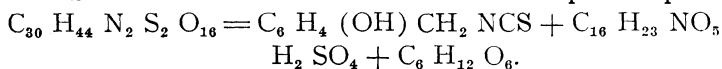


The white mustard is decomposed by myrosin ferment in the presence of water and produces a dextrose, sulphate of sinapine, which is classed among the alkaloids. A chemical reaction that takes place in white mustard is decidedly different from the one above just quoted.

Sinalbin.

Oil of Mustard.

Sinapine Sulphate.



The action of the oils of mustard is extremely irritating when applied to the skin, and if left in contact with the surface of the body for any great length of time they will produce blistering, which is at times extremely painful. The painful condition is in accordance with the depth which the oil penetrates. The application of mustard to the skin is usually made by mixing up the crude mustard with water, and its application is made to the surface of the skin where the warmth of the body causes the liberation of the oil, which results in the slow penetration into the tissues and in this way establishes the irritation. (To be Continued.)

OPERATIVE DENTISTRY

By R. B. Tuller, D. D. S.,

Clinical Professor of Operative Dentistry, Chicago College of Dental Surgery.

CHAPTER XXXI.

PULP CAPPING.

The experience of years throughout the dental profession at large, when summed up, seems to indicate that pulp capping is an operation that has more uncertainty as to its success than perhaps any other the dentist undertakes, and there are many who have determined that it is never a success, and that the only thing to do in case of exposures, is to proceed to destroy the pulp and extirpate it.

If any one rule could be laid down in regard to such cases, that rule might be, taking everything together, the best. There are, however, numerous instances where such a rule would be very much against the best interests of the patient, and especially young people, where an attempt at least should be made to conserve the pulp until the tooth formation and hardening is complete. It is, of course, well known that the end of the root, or roots, of a tooth is the very last to be formed, and that this development is all dependent upon the pulp.

It might frequently happen that decay would cause exposure of a pulp at some point before the apical foramen has closed to the normal size of maturity; and since the pulp in such teeth may be, in many instances, conserved at least until development and formation is complete, if capping is carefully and skilfully done, that operation should certainly be attempted.

The chances of success are greater usually with young people than older ones, and, as indicated above, the importance is greater with young people than those of maturity when the pulp has performed its principal function—that of building and hardening the tooth structure. The immediate conditions, however, of exposure must, of course, be taken into consideration in any case, as also the condition of the pulp; for extensive exposures and diseased conditions might indicate that any attempt of a capping operation would be futile. One of the difficulties of capping is to perform the operation without pressure upon the pulp and the larger the exposure the more difficult to avoid pressure; and at the same time the more likelihood of the pulp being too badly diseased to hope for success in capping.

Climate or locality, it is well established, has something to do with success or failure in capping pulps. That is to say, that operators who have had uniformly good success in one locality find on removing to another that the reverse is the order and that it tallies with the experience of other operators.

Since the removal of a pulp usually changes the shade of a tooth, and sometimes markedly, even with operators careful and skilful in filling roots in the most approved way to prevent, it is again incumbent on the dentist to do the very best he can for his patients, and it frequently happens that some of the anterior teeth—exposed teeth—of mature, and more than mature, people need a most careful diagnosis and careful handling to determine if pulp capping should not be the first effort towards doing the best thing for our patient.

In any of these cases of capping it is a wise thing to acquaint the patient with the exact status of such operation—that there are chances that it may prove a failure, and that no one but God Almighty can insure success. Explain clearly why, in your judgment, the capping should be tried; in young people with teeth not fully developed; to conserve so that Nature may not be defeated in her process of building up the bony structure to a perfect finish; and with older ones to keep the shade and lifelike appearance, which is of greater importance to some of our lady patients than to men as a rule. Being plain and open in these matters all along the line where we look for possible recurrence of trouble, will pave the way to their return, if trouble comes, not charging carelessness, neglect, mismanagement or ignorance; but feeling that the best was done for their good, if the operation proves not the success hoped for.

As with other operations in dentistry, many different ways of capping a pulp are advocated, and to lay down a single method as the only correct one would be presuming to an absurd degree. One thing can be laid down as a rule, and that is that no substance can be successfully used that will produce pressure on the pulp in placing, or later in filling over it. Something that is not irritating, but soothing rather, and that will flow over the exposure without pressure, and that will harden in a short time so that pressure exerted in placing the filling subsequently will not compress it further.

Cements answer the purpose well in flowing and hardening quickly, but are more or less of an irritant, unless a layer of some soothing non irritant intervenes. Copal-ether varnish (copal gum dissolved in ether) very thin, makes a good first coating over the pulp after thorough sterilization of the cavity and drying. This is a good cavity lining, but should never come to the cavity margins

where the fluids of the mouth will in time digest it if exposed. The ether evaporates rapidly leaving a thin skin over the exposure that the cement does not penetrate to irritate the pulp, nor the nerve filament (if we may so call them for convenience) that ramify the dentinal tubules. A thin collodion may be used instead. Thin, yes, so that the ether may quickly evaporate. A thick varnish takes too long to evaporate and harden.

Over this lining, oxy-phosphate of cement may be flowed or coaxed to place and allowed to harden without pressure. When hard any filling desired may be placed, provided gold is not malletted in until cement has completely crystalized. It is often a good plan to fill the entire cavity with cement and let some time elapse before a permanent filling is placed. In the event that the pulp is not going to tolerate the capping, evidences of it may appear in a short time—that is, aching and possibly the immediate death of the pulp, it is only necessary to bore through the cement to get at the seat of the trouble, and destroy, or begin over again.

Another method very satisfactory to many, and in the estimation of the writer, one of the best, is to cover the exposure with a paste of oil of cloves and oxide of zinc—the powder of the cement. Allow this to remain in its wet pasty condition until cement is ready to insert; then with a bit of spunk, cotton or bibulous paper, absorb the liquid from the paste, avoiding pressure, and when all is taken up that will be by this means, flow or coax in the cement without pressure.

This method while among the very best is one of the simplest and quickest to apply as a rule, for in applying a varnish, as above described, the cavity must first be treated antiseptically, remaining several minutes to be effective, and then must be thoroughly dried or the varnish will not stick. When it is in place it must be allowed to evaporate taking time; while with this paste the oil of cloves is the antiseptic treatment and remains a soothing and stimulating antiseptic under the filling.

In conclusion it is probably needless to say that preliminary to the operation of capping the cavity must have been carefully cleared of all decay with repeated applications of antiseptics that are not escharotic, and of course must be kept isolated from the fluids of the mouth. If capping is the aim it is better to leave some well sterilized bony substance over the pulp, though affected by the decaying influence, than to uncover too large a surface of the pulp in the endeavor to get away all decay or semblance of decay. Between a large area of exposure and leaving a little affected dentine in the bottom of the cavity, if decay has not gone too far, the latter has more chances of success. The larger the area of exposure the less are the chances of successful capping. (To be Continued.)

ORIGINAL CONTRIBUTIONS

TOOTHsome TOPICS.

By R. B. Tuller.

To be serious once.

How would you like to be the owner, or a very small part owner, in a thoroughly protected process of making glass that has nearly all the utility properties of iron or steel? A glass that is marvelous in strength, toughness, flexibility, durability, almost unbreakable, and yet retaining all the vitreous chemical resisting properties of any other glass?

Think of a bright clear glass, or opaque if you please, that may be rolled out into thin sheets like tin and that may be fashioned by the same sort of machinery, almost identically as tin is, into cooking and kitchen utensils, into cans, boxes, plates cups etc.; that may be stamped, crimped, and spun into all sorts of unbreakable dishes of all colors and designs and susceptible to all varieties of adornment and decoration; that may be blown into unbreakable bottles and all sorts of glass ware; that may be made into plate and ordinary glass for windows that will effectually resist the flying stones, snow balls and other missiles of bad boys; that may be drawn, to some extent, into rods and wire, still strong and flexible, and that may be used with perfect safety for a thousand and one things where metal wire is now used; that may be spun into fine threads and twisted into ropes and cables and woven into all sorts of durable and gorgeous fabrics and tapestries that will wear like iron and be waterproof; and to a considerable extent fire proof; that may be cast, pressed, wrought, forged, drilled and punched like iron, but not so easily filed, perhaps; that may be made into tools and instruments, and a million useful articles little and big, now made of metal; that may be extensively used in house building, producing an interior lighted through its entire roof and walls, and yet capable of being made opaque or translucent and in colors, always brilliant and never fading; that may be made with facility into all sorts of elaborate and

beautiful furniture light as wood, but strong and tough as iron; that may be used to advantage in making machinery, in whole or in part, along with iron and steel, and in railroad and other bridges, that will not rust and deteriorate in the weather; that may be utilized for railroad ties, and for cars, coaches and automobiles. Think of railroad trains and trolley cars built up in the possible beauty and finish of cut glass, not to mention the splendor of churches and public buildings. Think of its sanitary qualities and its resistance to the corrupting influences that prey upon iron and steel and wood; no rust, no rot; always tough like iron, and fire proof.

And, as dentists, think of what may done with it in making all kinds of artificial restorations in the mouth, plates, bridges, fillings, inlays and false teeth and crowns as well, with their own pins, posts and copings.

My! my! my! the wonders developed in electricity in the last half century are not in it, marvelous as they have been! Is the air-ship, almost a real and practical thing, just waiting for this age of modified glass, light, strong, durable, easily produced and capable of being utilized for the entire ship, gas container and all, to become a common means of transportation through the air? And we have not even mentioned what a revelation may be made in the ships of the sea. Wonders upon wonders! Are we to jump at a bound into a crystalline age through a simple little discovery in glass making that has been sought for years and not heretofore discovered? Are there billions in it for the owners of this discovery, fully protected? Will millionaires take second place and billionaires lead in the frenzied finance? Well, we should say—not. Keep your roll in your pocket; no one asked you to invest in the stock. There isn't any. Keep your money. We want to be fair, and would not deceive you. Who has said that such a discovery has been made—or ever will be? Not I, and I don't intend to say it, and make a big slump in iron and steel and other industrial stocks, with a consequent terrible panic. I would not be so mean (unless I owned the secret) and I've got too many irons in the fire myself—*sad*-irons at that, some of them, and—doggone it! my pipe has gone out.

(Toothsome Topics every month)



ABSTRACTS and **SELECTIONS**

MASSAGE TREATMENT FOR CONSUMPTION.

By CYRUS L. TOPLIFF.

My communications on the subjects of "Immunity from Consumption" and the "Cause and Cure of Consumption," published in the *Scientific American*, March 19 and May 21, 1904, respectively June issue AMERICAN JOURNAL, have brought forth so many earnest inquiries for further information in regard to the treatment of this disease—especially massage treatment—that I offer the following additional suggestions.

I do not claim to be familiar with the medical side of the question, neither have I ever attempted to diagnose the condition of the disease in any patient, because such matters belong to the province of the experienced physician. Such information as I have secured has been obtained by practical experience in giving several thousand massage or manipulating treatments to nervous invalids and tuberculous patients, and carefully noting the effect of such treatments on the mental, nervous, and physical condition of each patient. Any treatment which will benefit a nervous invalid will prove equally beneficial to a tuberculous patient, because tuberculosis is made possible only by a weakened or diseased condition of the nervous system.

As stated in my previous communication, scientific and practical investigations have proved that the microscopic vegetable germ—tubercle bacillus—is not the only cause of pulmonary tuberculosis, or consumption. The *real*, fundamental cause is the lack of vital force, which makes it impossible for the patient to resist the progress of the disease. Any excessive irritation of the mind, whether from physical or mental causes, is sufficient to cause a serious loss of nervous force. Therefore, the first and most important thing to be done is to try and eliminate from the mind of the patient, as much as possible, the elements of fear, anxiety and worry.

Post-mortem examinations, made at the hospitals, disclose many cases where the individuals have died from other diseases than con-

sumption, and yet the healed scars in their lungs gave evidence that they have had tuberculosis some time during their lives. If you could trace the history of some of those cases, you would find that, at the time they had this disease, their nervous force was greatly reduced as a result of great anxiety or worry, and when the cause of that worry was removed, and the mind relieved, they recovered their normal nervous strength, and then the progress of the disease was entirely stopped.

The short, hacking cough, which is usually present in consumption, seldom results directly from the disease alone, but is aggravated by some specific inflammatory condition in some other part of the body—not the lungs; and I have always found that as soon as this inflammatory condition was removed, this form of cough entirely disappeared, thus showing that it was largely caused by the reflex effect of such inflammation. As this form of cough wastes the nervous force of the patient very rapidly, it is of the utmost importance that it be stopped as soon as possible.

Incipient cases of consumption are comparatively simple to cure, but there is no easy or quick road to perfect health for a patient who is suffering from the disease in an advanced stage. It is therefore of the utmost importance that an early and correct diagnosis of the disease should be made by a skilled specialist, or some physician who has had a very extended experience in the treatment of tuberculosis, and has consequently become very expert in the use of the stethoscope—without which a correct diagnosis cannot be made. It is the lack of this knowledge which accounts for so many patients being treated for bronchitis, until the disease has advanced so far as to be incurable.

A very serious mistake is frequently made by taking the patient from a comfortable home and sending him to the mountains, with the expectation that the pure air alone will cure him. If he takes the mental and nervous irritations of his mind with him, and does not change his mode of living, he will die up there just as quickly as at home, and perhaps sooner, because, in some cases, the high altitude proves a very serious drawback to a recovery. The benefit derived from the purity and dryness of the air in high altitudes is largely offset by the unnatural stimulation given to the nerves and the consequent increased rapid action of the heart, which accounts for the oft-repeated statement that more consumptives, in Colorado,

die of heart failure than of the disease itself. Such an atmosphere is no doubt very healing to the lungs, or what is more probable, has some special properties which tend to check the disease and make it dormant as long as the patient remains there. The cure is not *real*, however, or the disease would not become active again so quickly after the patient changes to a different and less favorable climate.

It is perfectly true that an unlimited supply of pure air, night and day, provided it is used properly—by deep, rhythmic breathing—will entirely prevent comparatively well people from having consumption, and, in most incipient cases, will cure them. But when you treat a patient with the disease well established—sputum showing a number of the tubercle bacilli—then you have quite a different proposition to deal with, and the simple use of pure air alone has seldom effected a permanent cure. In such cases, it requires not only pure air, but persistent and careful practice in slow, deep, rhythmic breathing, to gradually open the air cells and introduce a constantly increased supply of fresh air. The double-breath, described in the *Scientific American*, March 19, 1904 (see June issue), is the best and most effective of the many breathing exercises. Breathing exercises, properly taken, not only develop the lungs, diaphragm, and muscles of the neck, chest, and abdomen, but they also invigorate and strengthen the action of the heart, liver, stomach and bowels.

If the patient is a business man, and wants to get well, he must make up his mind not to allow anything whatever to interfere with the removal of the fundamental causes of the disease. He must give up all thought of business, or anything else that could possibly worry or annoy him. He must not waste his physical or nervous strength for any purpose whatever, but must save his vital energy in every way possible until he has acquired a greater supply than he daily uses, and when he arrives at that stage he will begin to permanently improve, and *not until then*. The principal responsibility rests upon himself; it is for him to decide whether he will give up everything which might worry or annoy him, and get well, or try to attend to business or other cares, and waste what little vital force he may have left. He can get well just as easily in the East as in Colorado, provided he will breathe plenty of pure, dry air, surround himself with the proper environments, and allow no person

to interfere with the fulfillment of such plans as are necessary for his recovery; neither must *he* be allowed to interfere with the execution of such plans.

In addition to the breathing exercises and other suggestions, mentioned in my previous communications, the proper kind of massage or manipulating treating will prove of great value to the patient.

It is exceedingly difficult for me to write an understandable description of massage treatments. There are many ways of giving such treatments, but I will describe only the most important. In brief, only the balls of the fingers, and the ball (or fleshy part) of the thumb should be used in massaging any part of the body. The touch should be very firm and even, and the movement should be in perfect rhythm, and very slow; no strokes should be given more rapidly than the normal pulse rate, in fact, the best results have been secured by giving strokes of less than one per second. Rapid strokes, given with a heavy pressure more rapid than the normal pulse rate, produce an abnormal pressure on the walls of the veins and arteries, and will cause additional congestion and consequent inflammation of any inflamed parts of the body; but the very firm, slow and rhythmic strokes will produce no harm under any conditions. Heavy pressure should not be used directly on any part of the body which is sufficiently inflamed to be painful or sensitive to the touch. Treat around the part until the congestion is relieved and the soreness removed.

A few years ago, one of the best-known physicians in this country—who has devoted his whole life to the study and treatment of tuberculosis—told me that whenever he had occasion to prescribe medicine for his patients, he told them that if they found it disagreeable in any way—sufficient to cause a feeling of dread to take it—they could throw it out of the window, because the medicine could not possibly replace the loss of nervous force which might result from an irritation of the mind.

This eminent physician thoroughly understood the importance of keeping the mind in a quiet, restful, and rhythmic condition, in order to save and store up nervous force—a lack of which makes tuberculosis possible and incurable, while with an abundant supply of it, the disease can be prevented from getting a foothold, and can usually be cured, even in advanced cases.

If a simple dose of medicine can irritate the mind sufficiently to

require its discontinuance, then what must be the effect on the mind and consequent loss of nervous force when a patient is given certain forms of massage treatments which are exceedingly irritating, and frequently very painful? I refer, especially, to the pinching, slapping, and kneading movements, which are so commonly used at the present time. It has always been supposed that such treatments were absolutely necessary to promote the proper circulation of the blood, and especially of the skin; but careful investigation and practical experience show that such treatments cause a great loss of nervous force to the patient, and are absolutely unnecessary. Why give any irritating treatment, when a different treatment will secure all the beneficial effects without any undesirable results?

An ideal massage treatment is one which will secure for the patient all the benefits to be derived from the old forms of treatment, without causing him any pain or consequent nervous irritation, and without requiring him to use any physical strength to resist the pressure of the treatment, thus enabling him to remain in a *perfectly relaxed condition*, during the entire treatment. This can be accomplished as follows: When you are giving the treatment with one hand, the other hand should always be used to provide a counter pressure—no matter what part of the body is being treated—thus relieving the patient from physical strain.

All massage manipulation should be made toward the heart. The treatment on the back should be given by the ball of the thumb, and it should be given the whole length of the spine, placing the left hand on the chest to provide a counter pressure, which will save the strength of the patient. In giving this special treatment, the pressure should usually be from the neck toward the end of the spine, the object being to relax any contracted muscles, and, at the same time, to stimulate and strengthen all nerves connected with the spine. Another very important treatment is given as follows: With the patient lying on his back, use the balls of the fingers only, and with a perfectly even, firm, and rhythmic pressure, massage the entire neck from the spine forward to the clavicle (collar bone), also from the base of the ear down the neck and under the jaw, the object being to stimulate and strengthen the pneumogastric and other nerves leading from the brain and spine which supply the heart, lungs, stomach, and diaphragm with their motive power. This same form of treatment should be continued all the way down

the spine, the movements being given from the spine forward and over the sides of the patient.

The external massage or kneading of the bowels should not be given under any circumstances, because such treatments are usually disagreeable and painful to the patient, frequently causing much harm, and in no case can they do much good, in fact, they are unscientific and unnecessary. The question to be considered is not, can the patient stand the pain or nervous irritation of such treatments, but can he afford the loss of nervous force caused by them? In treating the arms and legs, all massage movements should be made toward the body, in order to assist the venous circulation. It has hitherto been the practice to commence with the fingers or wrists, and make the strokes to the shoulders, although some masseurs give one stroke from the ends of the fingers to the wrist, and then from the wrist to the elbow, and, again, from the elbow to the shoulder, which system of treatment does not seem to me as scientific or natural as the one detailed below.

It is often found that imperfect circulation of the venous blood results in, or is accompanied by, imperfect action of the valves in the veins. Suppose you had a rubber tube which was partially or wholly closed up in two or more places; which would be the easier and better way to release such obstruction—to put a heavy pressure on one end of the tube and try to force all the obstructions out at one time, or to use the hand with a light pressure and massage movement near the outlet of the tube, and gradually approach the other end—releasing each obstruction separately? Of course, a practical test would show the latter plan to be the better, the obstructions being removed very easily and quickly without producing any undue pressure on the walls of the tube. In order to test this theory, I gave treatments of the arms by commencing at the shoulder, gradually approaching the fingers; also from the thighs, gradually approaching the feet—making all strokes toward the body—thus trying to relieve the valvular or other obstructions in the veins or lymphatic vessels singly, in place of several of them at one stroke—which is impossible.

There may be a difference in opinion about valvular obstructions in the veins and lymphatic vessels, but I know, without a doubt, that this system of treating the limbs improves the circulation of the blood, not only more quickly and more effectively than the old way,

but also without irritating the nerves of the patient, thus adding to his comfort and saving his nervous force. If the loss of nervous force makes tuberculosis possible, and an abundant supply of it will cure the disease, then it is of the utmost importance that we keep that idea in our minds continually, and make it our constant study how both to save and develop the nerve force in the tuberculous patient.

It seems to me that there is a general inclination to treat the *effects* of a disease in place of correcting or removing the fundamental causes. Treatment of the effects may give temporary relief, but the causes *must* be removed before a permanent cure can be effected. In no case is this truth more clearly demonstrated than in tuberculosis.

The skilled horticulturist, who finds that the tips of the limbs on his trees are dying, does not waste time by giving the leaves and extremities of the limbs a special treatment, but he at once looks for the fundamental cause, and examines and treats the roots of the tree, and possibly enriches the soil about them, knowing very well that when the roots and trunk are put in a perfectly healthy condition, the trees must soon recover its normal strength and will send out new life to all its branches. The same rule of nature applies to the human body. If from any cause a nerve becomes inflamed, or diseased, the patient is usually made conscious of the fact by pain, or other disagreeable sensation, at the extreme end or termination of the same, in place of the root or base, where some might naturally expect it.

From personal observation, I am fully convinced that the fundamental cause of tuberculosis, or any nervous affection, is the loss of nervous force through irritation of the mind resulting from mental or physical causes; but the first injurious *effect* of such irritation seems to be transmitted to the pneumogastric and other motor nerves, and is usually followed by a corresponding weakness of the lungs, heart, liver, and stomach; but when the roots or base of the pneumogastric and other nerves are stimulated and strengthened by a proper massage treatment, they very quickly commence to recover their strength, and the weakness of the internal organs begins gradually to disappear. In this case, like the trees, the weakness first appears in the extremities of the nerves in place of at the base or roots. This rule, which applies to the lungs, heart, liver, and

stomach, also applies to the bowels and all of the internal organs. If you can strengthen the nerve centers and roots of the motor and other nerves which impart life and vigor to these organs, you will find that the unscientific massage treatments—by kneading, twisting, pinching, and slapping—can be abandoned.

It is unnecessary for me to mention the necessity of having a proper diet, plenty of fresh air, and proper sanitary surroundings for the tuberculous patient, because the medical profession and especially the boards of health of this and other cities, have done splendid work and accomplished wonders in educating the people in regard to the importance of these requirements.

I do not pretend to claim that massage is the only treatment necessary to cure tuberculosis, and, as is well known, medical treatment alone cannot cure it; but I believe that the combination of these treatments, together with suitable diet, pure, dry air, proper environments, and sanitary surroundings—all under the guidance of the experienced physician—can completely master, in its early stages, a disease which has destroyed millions of lives in all parts of the world.—*Scientific American*.





EDITORIAL

EDITORIAL.

In the August issues of both the *Dental Digest* and *Dental Review* are editorials of excellent aspirations to higher education in the art and science of dentistry. In the *Dental Digest*, p. 140, August, 1905, the editor calls attention to two scientific papers in that issue of his most excellent journal, and points out the necessity for farther and more earnest study on the subject of physiology.

It might be said that up to a very brief period in the past and even at the present time dental journalism as well as text publications, have consisted principally of what are classed as practical subjects, and in fact many of the dental journals avoid so far as possible accepting literary products, other than those purely relating to matter of finger craft. Consequently, when the brain has not been trained to think along the lines of physiological phenomena and the laws that govern growth, from either a mechanical or vitalistic standpoint, it is devoid of interest for, nor does it understand, the value of physiology. Two lectures a week of one hour each for six or seven months by a practicing physician who must of necessity miss more or less of these lectures, can never make the subject of physiology of any great importance to the dental student, neither will this education ever raise the standard of dentistry or place the dental profession on a par with any of the learned professions.

The editorial above mentioned calls attention to the fact that dentists should instruct their patients along those lines which would give them a better understanding of the importance of certain diet, as a means of establishing a better condition in the oral cavity. Before a dental student or dental practitioner should approach his patient with reference to instructions along physiological lines, he himself should have been well grounded in the consideration of the various chemical elements, and the forces concerned in the vital manifestations of life as they appear in man and the higher animal. Nature must be considered as a whole if she is to be understood in detail. There must be a clear comprehension of the great unchanging laws which are each applicable to the organic and inorganic world. And without this understanding he should confine himself to the hygienic instructions necessary to take fairly good care of the oral cavity.

The editorial in the Dental Review, September, 1905, p. 173, calls attention to the fact that during the past few years, with all of the dental activities that have manifested themselves in the progress of dentistry, there are a number of problems still unsolved and always will be. If there are no problems to solve progress must necessarily cease when one has reached a certain point in their study and investigation. If some one were to dish up in pure cultures certain phases of scientific problems the majority of the dental profession could not comprehend the true meaning of the processes under consideration. Miller, whose work has raised the dental profession higher in the public eye and in the scientific world than any other investigator in dental problems, has been misquoted and misunderstood more than any other man in the profession of dentistry. Some of our best teachers and best writers in dentistry have at times made Miller's words and work appear in a very different light than they were intended, and the reason for this has been due to the fact that they were not trained to interpret true scientific thought.

Therefore, we must consider that the solving of scientific problems is very largely the ability of those who are interested in special scientific studies to comprehend and correlate scientific facts as they are presented by workers in scientific fields. Bunge has said that "the mysteries of life lies hidden in activity," but the conception of activity has come to us not as the result of sensory preception but from the study of our own internal consciousness. We transfer to the objects of our sensory preceptions to the organs and to the tissue elements and to the very minute cells something which we have acquired from our consciousness." Therefore to understand the vital phenomena of life and all that goes to make up its physical and chemical structure, there must be a fundamental consciousness that is capable of reasoning out on logical lines the fundamental laws which govern physiological and pathological phenomena as they appear in the tissues and cells of the body.

These editorials are both worthy of consideration and show a more healthful outlook for the literature of dentistry than has usually been manifested in editorial writing. No one would regret more than me to see the finger craft articles disappear from the literature of dentistry, but it should be our aim and object to strike a much higher average in the understanding of scientific problems than it has been in the past, and we hope that our worthy colleagues may continue to ask the readers of dental literature to raise their thoughts to a higher plane of reading and thinking.

G. W. C.

SOCIETY PROCEEDINGS

*REASONS FOR PREFERRING SOMNOFORM TO NITROUS OXIDE AS A GENERAL ANESTHETIC.

BY G. C. BOWLES.

Mark Twain, traveling in Europe, came across the Bridge of Sighs. Standing upon that historic structure he sighed and remarked: "Alas, I shall never forgive Lord Byron for coming here before me. The fine things I would say about this place he has said. The emotions that shake my frame he has portrayed. The words that spring to my lips he has stolen and given them long since to the world. It is a plagiarism I cannot, I will not forgive."

In this I sympathize deeply, understandingly, with Mark for on the subject of Somnoform anesthesia, Dr. Rolland, of Bordeaux, has done for me what Lord Byron did for Twain. But I bear the Doctor no ill will.

Not only has he given us Somnoform but he has written about it so ably, so understandingly, and from every phase of its use and action, that beside taking the words out of my mouth, he has apparently taken them out of the mouth of every writer whose remarks on the subject I have seen. This being the case, I shall content myself with giving the reasons for my preference for somnoform after ten months' experience, and not parade original quotations from Dr. Rolland's writings as samples of my own wisdom and understanding of the subject. No dentist would ever do such a thing, of course.

Therefore, for a concise and simple presentment of the subject, giving in condensed form the result of Dr. Rolland's investigations, the nature of Somnoform, its mode of administration, its physiological effects, etc., let me at once refer you to the little treatise "General Anesthesia Produced by Somnoform," published by E. DeTray & Sons to be had at the dental dealers for the asking. Herein will be found in permanent form more than I could say on the subject, did you care to listen. Let me say this, however, such of the state-

*Read before the Michigan Dental Association, July 10, 1905.

ments and claims there made that the ordinary practitioner, administering the agent for practical and not experimental purposes, can verify I have verified and that thus far I am, in every way, highly pleased with the results.

In 1895, Dr. Rolland undertook the teaching of the theory of anesthesia in the Bordeaux Dental College, and according to the introduction of the little treatise above mentioned, "he soon found himself confronted by the problem of how to produce a rapid anesthesia easily brought about and presenting no danger; followed by a quick return to consciousness and having no ulterior and troublesome sensations." Doesn't that take the words out of your mouth? My practice does not demand very frequent use of a general anesthetic, but when it does it is for just that kind. My cumbersome old nitrous oxide outfit didn't fill the bill. A case presented last September, of which I shall speak again, forced me to do something. The result was that I put in a new, three-cylinder oxygen and nitrous oxide apparatus, and had the H. J. Caulkins Co. send for the first Somnoform outfit brought to Detroit; probably the first brought to Michigan. Somnoform has practically solved the problem for me. I say "practically" for, taking my experience as a whole, it has not absolutely.

In the first place, I have had more than the average one percent of nausea cases, due chiefly to overdosing, the result of inexperience. One case was due to the administration of the anesthetic immediately after a full meal. In the second place, I narrowly escaped a thrashing from an infuriated traveling man who thought he was intoxicated, and that I was taking him home to his wife. He might have produced ulterior and troublesome sensations for me. However, I administer Somnoform every time occasion requires a general anesthetic, while my new gas outfit stands beside the chair unused. This sufficiently indicates my choice.

Why do I prefer Somnoform to nitrous oxide gas? Well, in the first place because, in my hands, it is more dependable. The patient can be assured unqualifiedly that he will know absolutely nothing whatever of the operation; indeed, that he will quite likely have some pleasant dream or enjoyable experience. The traveling man was happy until he thought his wife was likely to know about it. This assurance I could not give with gas. Occasionally I have found patients whom it was impossible to completely anesthetize with it,

and frequently I have found those who, though seemingly unconscious, complained that they were not insensible to the pain and shock of the operation. From the frequent repetition of such remarks as, "Now, Doctor, give me enough, won't you?" The last time I had a tooth pulled the dentist said he gave me gas enough to fill a balloon, but I felt it more than if I had taken nothing." I conclude that my experience is not peculiar to myself. Faulty apparatus, no doubt, has a good deal to do with the failure to produce complete narcosis with gas. The administration of too small an amount of the gas is another reason, and certainly in some cases the painful sensations complained of are purely subjective. The patient expects to be hurt, and the brain cells, acting upon the suggestion, probably at the first moment of returning consciousness, records the anticipated sensation. I had a demonstration of the subjectivity of such sensations about a year ago. This is the case referred to earlier in the paper. The patient presented with the roots of three wisdom teeth to be extracted. The roots were loose and could have been almost painlessly removed without the use of any anesthetic, but the patient was not the kind to take chances; gas was administered, a root was snapped out in a twinkling, but even as it came the patient sat up, fully returned to consciousness. At the same sitting, three subsequent efforts were made to anesthetize the patient, but without avail.

Relating the experience to the demonstrator of an improved modern gas apparatus who was then exhibiting his outfit in the city, he said: "I will put that patient to sleep and keep her there an hour, if you wish it." I wished it. The patient, like Barkis, "was willin'," and an appointment was made. During the course of an hour and a half, seven attempts were made to put that patient to sleep; gallons of gas were inhaled or forced down her throat under pressure, but she never completely lost consciousness for one moment. When the baffled demonstrator removed the inhaler, after the last effort, the very patient said, "You got it that time, didn't you?" I replied that I had not even tried. Said she, "Why I felt the forceps slip off three times, then you tried again, and I felt it give way and come out." The root still being in place, she was easily convinced of the subjective nature of the sensations; but had the root fallen out, she would have known that three fruitless efforts had been made before it was finally removed.

With somnoform so far I have had no such experience. I have never had a patient complain of any unpleasantness such as the rough joltings and the shocks, that so frequently accompany the parting of the tooth from its environment under gas.

In the second place, I have nearly twice as long to operate. I rarely got more than thirty or forty seconds under gas. I easily get sixty or more under somnoform. This is a very great advantage, for it gives one time to go carefully and deliberately about the work. When extracting roots it is not necessary to make a grab and take gums, process and all; and one very rarely has to finish an operation with the patient struggling and screaming in the chair. If necessary, as with gas, somnoform may be administered two or three times in succession with the same ease and certainty as at first and with little or no appreciable increase of discomfort to the patient.

In the third place, the absence of cyanosis saving onlooking friends from the fear of impending disaster, is no slight advantage. We may assure such friends that the ghastly pallor is entirely without significance, but the slightly improved color of the patient under somnoform is a more pleasant and convincing assurance to them, if not to ourselves than our most plausible affirmations.

Another marked advantage, especially in the case of children, and hysterically-inclined individuals, is that the period of excitement is so very brief that they relapse into a passive non-resistance almost before they have time to struggle. With three or four inhalations, excitement vanishes. Three or four more and the gaze becomes fixed, and the flexed arm falls. Three or four more and a gentle snore announces that we may proceed with our operation.

Everyone is familiar with the great difference in the amount of gas required by different individuals. With somnoform, so far I have noted no such variations. I rarely give more than two or two and one-half cubic centimeters to children; nor more than four, and never more than five to adults. And usually there is enough left in the inhaler, after the operation is performed, to put me to sleep.

There are other advantages. For instance, the compactness of the apparatus, and the ease with which it is handled; the comparative ease with which it may be kept sterile; the simplicity of the parts and consequent lessened liability of derangement; the first cost and the cost to us.

These are all positive advantages from every point of view over

gas. So far, as compared with gas, I have met with no disadvantages. Of course, in this country it yet remains to be seen whether it is as universally a safe agent as is nitrous oxide. If it proves so to be, it must certainly supplant that and every other at present employed agent for producing general anesthesia for all dental purposes.

As before stated, I did not know until I received a program a few days ago that I was expected to write about somnoform and how to use it. Thinking I was free to roam round the general subject of somnoform, I purposely omitted, it appears, the very thing I was expected to discuss. I had reasons for this. In the first place, I knew that printed matter giving this information and to which I had nothing original to offer would be on hand and free to all interested. In the second place, this information may be brought out in the discussion if thought necessary, and in the third place, I want to speak of a subject not assigned to me but which is entitled to consideration at a meeting so interested in the subject of anesthetics as is this. I refer to the analgesia, produced by rapid breathing, and first called to the attention of the profession by Dr. Bonwill, of Philadelphia, in 1880. Says Dr. Bonwill: "I can produce from rapidly breathing common air at the rate of one hundred respirations a minute a similar effect to that from ether, chloroform and nitrous oxide gas in their primary stages; and I can in this way render patients sufficiently insensible to acute pain from any operation where the time consumed is not over from twenty to thirty seconds."

Dr. Bonwill used this method to the exclusion of all others in his own practice, and Dr. Hewson, a surgeon of Philadelphia, employed it extensively and successfully in minor surgical operations. Why, then, has it not come into general use?

Because to the great majority of people it is extremely difficult to raise the respiration to one hundred and keep it there the required length of time. To many, it is a physical impossibility. Perhaps, too, experimenters failing to produce the analgesia Dr. Bonwill obtained have not realized that they were actually, to a considerable degree, lessening the patients susceptibility to pain.

However this may be, for the past four years I have employed a modification of this agency and have found it an invaluable aid in the preparation of sensitive cavities, the removal of those troublesome nerve remnants, the handling of nervous children, etc.

I instruct the patient to breathe deeply and forcefully, at the rate of about forty respirations a minute. This focuses the mind on the part he has to play and he is informed that according to the faithfulness with which he performs that part will be his freedom from pain. It also relieves the high nervous and muscular tension, that rigid attitude of expectancy, wherein the patient is ready instantly to react to the faintest intimation of pain, and he now stands almost without a wince what before he would not tolerate. The analgesic effect appears to be greater at the period of inhalation, and in particularly sensitive cases I say to the patient, "Now let us work together; you inhale deeply and vigorously, so that I can hear you, and I will cut at that time. If it hurts, don't stop, but breathe the harder."

The patients are often skeptical and want to know if it is Christian science or mind cure they are getting, but after trying it, all agree that it is a very great help, and some become highly enthusiastic in its praise.

There are several theories advanced to account for the effects produced. None of them are entirely satisfactory. I shall not burden you with recounting them. But I shall be pleased to demonstrate the value of this method when the operators get to work at the clinic Wednesday, if by chance any of them happens to have a sensitive patient. I do not claim that this method produces absolute insensibility to pain, but it very greatly reduces it, and makes the worst cases bearable. It is something that every practitioner can use many times every day. It requires no apparatus, no expense, leaves no bad after-effects and consumes no extra time. Try it. Work out its possibilities and you will find that it has its place along with somnoform gas, pressure anesthesia and the other valuable aids toward the consummation, devoutly to be wished.

—*Dental Register.*

***NEW PORCELAIN CROWN.**

By C. H. WORBOYS, D. D. S.

DR. C. H. WORBOYS: I will describe what to me is a new method of adapting a porcelain crown or hood to a natural tooth which does not require a knowledge of porcelain technique or that the pulp be devitalized and removed.

The tooth that is to be operated upon should first be anesthetized with cocaine and then the enamel ground off, leaving a shoulder just below the gum line and the stump conical in form, and if practicable leaving sufficient dentine to protect the pulp.

The substitute that is used in this operation may be a counter-sunk pin tooth, such as is used for rubber plates, a Davis crown, or any other porcelain tooth or crown that has a hole in its center, the larger the better, usually.

An impression is taken of the prepared stump in white sheet gutta-percha with a tray made of a band of German silver or copper, shaped to fit the gum on the labial and lingual sides. For this purpose I have found that a shell, such as is used for a seamless crown, that can be placed between the adjoining teeth, is very convenient.

The gutta-percha is warmed well, placed in the tray, carried firmly to place, and held until it cools. It must be carefully removed then a piece of the sheet gutta-percha, about three-fourths of an inch wide, is warmed and wrapped around the impression and tray, the edges being stuck together. The impression is then poured full of any of the low-fusing alloys, producing a model of the stump on which to roughly fit the crown, which is done entirely with grinding stones. For the grinding I like the carborundum stones mounted with shellac. The gem stones are necessary to grind the inside of the crown so that it will fit over the stump.

By painting the metal model with oxid of iron and glycerin you can tell where the crown strikes on the model, and by frequently trying on the crown and grinding carefully it can be made to fit very closely, occasionally trying in the mouth for noting correct position. The final fitting should be done in the mouth, where the stump is to be painted and the crown ground, or the crown painted and the stump ground, as you prefer for the best interests of the case.

When the crown is fitted and ready to set, the stump should be cleaned and dried, then a quick-setting inlay cement is mixed thin and placed in the crown and the latter fitted as soon as possible.

—*Dental Digest.*

***FUTURE OF PORCELAIN AS A FILLING MATERIAL.**

DR. F. E. ROACH: There are men who are still discouraging the use of porcelain, insisting that it is a fad, and some are predicting disaster and ruin to its users, but I have observed that as a rule they are men who have never used porcelain to any extent themselves and have based their opinions upon observation rather than experience, and since our failures are more often seen by our fellow practitioners than our successes, it is unfair to pass judgment in view of such evidence. There is another class who through judicious use and a lack of knowledge of its manipulation and application have made a failure in its use, and they are condemning the method and material when in reality the fault is with themselves. On the other hand, we have such men as Land, the Capons, Head, Taggart, Reeves Thompson and others who have given it the test of time and who by their untiring efforts have brought it up to its present state of perfection and usefulness, as staunch supporters of its real merit as a filling material.

The fact that porcelain has a greater range of application, is more permanent, more compatible, harmonizes in color better, is more sanitary and requires less physical exertion upon the part of both the patient and operator than any other material will force its universal adoption in time. When I say that it has a wider range of application I refer to its use in the hands of those who know how to manipulate it. As already stated, there are but few cases where gold is indicated for the anterior teeth, and for all large cavities in molars and bicuspid porcelain will do better service than either gold or amalgam.

That porcelain will prove the most permanent of all filling materials I am thoroughly convinced. In six years of personal use I have yet to see a case of recurrent decay, and the testimony of men who have been using it for fifteen or more years substantially establishes this as a fact. This feature alone is of no mean importance in a great many mouths.

The most likely failure of the porcelain filling is bodily displacement, and when this occurs the patient is cognizant of the fact at

*Extract of paper read before the Northern Indiana Dental Society at Huntington, Oct. 18-19.

once and seeks repair before any further damage occurs; while in the case of either gold or amalgam fillings decay may go on under and around them until the tooth is almost entirely destroyed before the patient is aware of anything wrong. The replacement of the filling invariably means that it is all to be done over again from the foundation up, while with the inlay resetting is usually the only requirement.

In compatibility nothing compares with porcelain. It is wholly devoid of thermal and electrical conductivity and is free from expansion and contraction. These are very desirable and, indeed, essential qualities where the vitality of the pulp is to be preserved and frail enamel walls are to be left standing.

The possibilities of this material from an esthetic point of view are simply not approached by anything else. Even in the hands of the novice no such incongruities of harmony will occur as with gold or amalgam, and in the hands of those skilled in its use the most conspicuous cavities can be so filled that the casual observer will fail to detect them.

The porcelain filling being impervious to moisture and having a highly glazed surface to which foreign matter will not adhere, places it in the first rank from a sanitary standpoint. This feature establishes a very desirable condition, favorable not only to the tooth being repaired, but to adjacent teeth and gum tissues as well.

The physical exertion required to perform any operation as it should be done ought not as a rule to be considered; but in some cases it becomes imperative and here porcelain offers a happy relief to both patient and operator. Porcelain has been called the lazy operator's friend and a make-shift for the timid patient, but be this as it may, I am willing to be called lazy, and I notice that my patients are willing to pay me larger fees for my laziness, are as a rule better pleased, and are more tolerant of failure.

The above-mentioned features inherent in the material itself are sufficient to force its adoption in time, but with added strength, simplified methods and improved equipment in general we may reasonably expect much more rapid development in the future than in the past. Another sign of progress is the attention that is being given by the colleges to this department of work, and very soon instead of being a "side show" I expect to see porcelain take first place in both operative and prosthetic departments.—*Dental Digest*.

PORCELAIN

I believe it will take time to get the profession interested in porcelain inlays, as they may be considered a fad by some, but when crown and bridgework was first introduced by the profession it was considered a fad, and it was not uncommon to hear people say that they would have their teeth crowned. This work may be carried to extremes, the same as crown and bridgework has been, but because a few men go to extremes is no reason why we should condemn it. Porcelain is not a fad and is here to stay, but I do not entirely agree with Dr. Roach, for I believe that gold and amalgam will always have their place as filling materials. Those who condemn it have usually seen only two or three porcelain crowns. I believe, however, that we are expecting too much of porcelain, but don't condemn the material because at the start it does not come up to your ideal, as you will feel more encouraged in this work later on. In using porcelain we have a material that is more steady and firmer than other agents, also one that will be permanent. While gold fillings do not drop out as inlays do, many of them ought to drop out. There is no such strain on the patient in making porcelain inlays as in gold fillings, and I can do the principal part of the work at my desk. The patient will also become interested in the work, as most of our patients have a keen appreciation of art and anything that appears to be artistic appeals to them. Finally, a great deal of time can be saved by the use of porcelain.—*J. L. Bryan, discussion Dental Digest.*



SOCIETY ANNOUNCEMENTS

AND REPORTS OF MEETINGS

GRANT COUNTY DENTAL SOCIETY.

The dentists of Grant County, Indiana, met Oct. 3 at Marion and organized a Dental Society. The following officers were elected: President, Dr. J. S. McClain; vice president, Dr. E. H. Kimball; secretary, Dr. N. W. Hiatt; treasurer, Dr. Forest Freeman. Meetings will be held on the second Tuesday of each month.

PROCEEDINGS OF FOURTH INTERNATIONAL DENTAL CONGRESS.

THE AMERICAN DENTAL JOURNAL acknowledges receipt of Vol. I and II, Vol. III being nearly ready for delivery. They are printed in magazine style, pages size of *Cosmas*, and upward of 500 pages to each volume. Many illustrations are given, and the *Cosmas* may well be proud of this great achievement.

INDIANA STATE BOARD OF DENTAL EXAMINERS.

The Indiana State Board of Dental Examiners will hold their next regular meeting at Ft. Wayne, January 9th, 10th and 11th, 1906, in the office of Dr. J. S. McCurdy. All applications for examination must be filed with the Secretary not later than January 4th. For further information apply to the Secretary,

F. R. HENSHAW,

Middletown, Indiana.

CHAMPAIGN-DANVILLE DISTRICT DENTAL SOCIETY.

The above named society met in Danville, Ill., Oct. 3d. A clinic was given in Dr. Stewart's office and papers were read by Dr. Conkey, of Homer, on "Importance of up-to-date text books in public schools on prophylaxis and by Dr. Stewart in cavity preparation. The former paper was discussed by Drs. Howard Hanley and Sales, and the latter by Hanley, Poague, Miller and Wilson. Next meeting will be first Tuesday in December at Champaign.

FIRST DISTRICT DENTAL SOCIETY OF ILLINOIS.

The twenty-second annual meeting of the above named society was held at Quincy, Ill., Sept. 26-27, and the following officers elected for the ensuing year: President, Dr. J. W. Marsh of Warsaw; vice president, Dr. O. M. Daymude of Monmouth; secretary, Dr. H. W. McMillan of Roseville; treasurer, Dr. J. M. Evey of Monmouth. After the Monmouth dentists present had promised

FOX RIVER VALLEY DENTAL SOCIETY OF ILLINOIS.

The second quarterly meeting of the Fox River Valley Dental Society was held at Aurora Sept. 14. Fifty-five dentists of Aurora, Elgin and Chicago were present.

Dinner was served at 7 o'clock, after which all retired to the parlors and listened to papers by Dr. Rudolph Beck of Chicago on "Radium in Dentistry" and by Dr. C. R. Taylor of Streator on "Fellowship in Dentistry." The papers were then discussed, and meeting adjourned.

SOUTHWESTERN IOWA DENTAL ASSOCIATION.

The Southwestern Iowa Dental Association was in session at Creston, Iowa, October 10-11. The meeting was well attended and was interesting and instructive both as to papers and clinics. The following officers were elected for the ensuing year: President, Dr. F. M. Kelsay, of Villisca; vice-president, Dr. F. H. Scranton, of Corning; secretary, Dr. George Brooks, of Greenfield; treasurer, Dr. G. E. King, of Villisca. The next meeting will be held the second Tuesday in October, 1906.

FOX RIVER VALLEY DENTAL SOCIETY.

The second annual meeting of the above named society was held at Fon du Lac Sept. 12. The society was the guest of the Fon du Lac Dental Society and was well taken care of. President Chilson of Appleton delivered his annual address, after which papers were read by Drs. W. A. Chamberlain of Fon du Lac, J. E. Reinbold of Chilton and G. A. Gehbe of Oshkosh; discussion followed. The afternoon was devoted to clinics, and a banquet was served in the evening. The following officers were elected for the ensuing year: President, Dr. T. A. Hardgrove of Fond du Lac; Vice-President, Dr. A. J. Du Bois of Neenah; Secretary, Dr. Mary Hastings of Oshkosh; Members of Board of Censors, Dr. G. A. Stratton of Oshkosh; Treasurer, Dr. Walter C. Conkey of Appleton; Member of Board of Trustees, Dr. W. E. Tennant of Fon du Lac. The next meeting will be held in Neenah.

NORTHERN INDIANA DENTAL ASSOCIATION.

The best session of Northern Indiana Dental Association ever held in the history of the association was held at Logansport, Sept. 10-20. The social session and banquet was a delightful affair and formed a pleasant rest from the strenuous doings of the delegates.

The election of officers resulted as follows: President, Dr. Otto U. King, of Huntington; Vice-President, Dr. F. M. Bozer, Logansport; Secretary-Treasurer, Dr. S. A. Bell, of Hammond; Supervisor of Clinics, Dr. L. A. Salisbury, of Crown Point. One of the most interesting clinics was the operation performed at St. Joseph's hospital at 11:30 a. m. by Dr. Truman W. Brophy, dean of the College of Dental Surgery at Chicago. Patient, a 7-year-old girl. The operation was successful, and the lecture which Dr. Brophy gave during the operation was very fine and was listened to by a large number of dentists and physicians who witnessed the demonstration.

THE AMERICAN SOCIETY OF ORTHODONTISTS.

Scientific students of orthodontia from all parts of the world gathered Sept. 28-30 to attend the fourth annual meeting of the American Society of Orthodontists.

This is the only society of its kind in the world. Its members are from England, Australia, Germany, France, Holland, Italy and various parts of the United States. Sixty delegates were present.

The meeting was opened by an address by President Lloyd S. Lourie of Chicago, discussion by Dr. Edward H. Angie of St. Louis and Dr. Milton T. Watson, Detroit. The first subject was, "The First Superior Molar as a Basis of Diagnosis in Malocclusion." A paper on "Duplication of Models," read by Dr. Walter Hellis of Buffalo, was freely discussed. Following a discussion led by Dr. J. Lowe Young and Dr. Wilson Foster, papers on "Old and New School of Orthodontia" and "The Influence of Inheritance on Malocclusion," which were read by Dr. Frederick S. McKay of St. Louis, Mo., and Dr. William J. Brady, Iowa City. Those who joined in the discussion were Dr. Rolof B. Stanley, Dr. Milton T. Watson, Dr. A. H. Ketcham and Dr. Varney E. Barnes. At the afternoon and closing session reports on important and interesting cases which have been studied by the members were made. The subjects were announced by Dr. Axel Lundstrom, Goteberg, Sweden.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The National Association of Dental Examiners held its annual meeting July 24 and elected the following officers and committees:

President—H. W. Campbell, D. D. S., Suffolk, Va.

Secretary and Treasurer—Charles A. Meeker, D. D. S., Newark, N. J. Chas. Oehlman that a new hotel with bar would be provided, the above town was decided upon for the next meeting.

Vice-Presidents—From the West, F. O. Hetrick, D. D. S., Ottawa, Kansas; from the South, F. A. Shotwell, D. D. S., Rogersville, Tenn.; from the East, George E. Mitchell, D. D. S.

Committee on Colleges—J. G. Reid, chairman, 1204 Trude Bldg., Chicago, Ill.; George E. Mitchell, D. D. S., Haverhill, Mass.; J. J. Wright, D. D. S., Milwaukee, Wis.

Committee on Conference—J. F. Dowsley, D. D. S., Chairman, Boston, Mass.; F. O. Hetrick, D. D. S., Ottawa, Kansas; R. H. Walker, D. D. S., Norfolk, Va.

Membership Committee—M. F. Finley, D. D. S., Chairman, Washington, D. C.; Thomas Cole, D. D. S., Newman, Ga.; C. R. Taylor, D. D. S., Strettor, Ill.

State Advisory Committee—Henry Barnes, M. D., Cleveland, Ohio; George E. Mitchell, D. D. S., Haverhill, Mass.; E. P. Dameron, D. D. S., St. Louis, Mo.; C. H. Oakman, D. D. S., Detroit, Mich.; W. G. Mason, D. D. S., Tampa, Fla.

Committee on Promoting Relations with Foreign Examiners—T. J. Barrett, D. D. S., Chairman, Worcester, Mass.; F. A. Shotwell, D. D. S., Rogersville, Tenn.; F. C. James, D. D. S., Winona, Minn.; C. Stanley Smith, D. D. S., Cincinnati, Ohio.

Committee on Resolutions—H. C. Brown, D. D. S., Columbus, Ohio; C. S. Stockton, D. D. S., Newark, N. J.; F. F. Drew, D. D. S., Baltimore, Md.

Committee on Contracts—Charles A. Meeker, D. D. S., Newark, N. J.

Committee on Tabulation of Examiners' Reports of Examinations—Alphonso Irwin, D. D. S., Camden, N. J.

FIRST ANNUAL CLINIC OF THE FRATERNAL DENTAL
SOCIETY OF ST. LOUIS, NOVEMBER 20-21, AT THE
BARNES DENTAL COLLEGE.

Special features of the meeting will be a series of lectures on "Cavity Preparation," "Methods and Principles of Packing Gold," "Methods and Principles of Finishing Fillings," by Dr. E. K. Wedelstaedt of St. Paul.

The following well-known members of the Black and Wedelstaedt Clubs will be present and clinically demonstrate "extension for prevention" to its fullest extent: Drs. A. C. Searl, Owatonna, Minn.; J. F. Wallace, Canton, Mo.; C. W. Booth, Cedar Rapids, Iowa; J. J. Booth, Marion, Iowa; Wm. Finn, Cedar Rapids, Iowa; J. B. Pherrin, Central City, Iowa; Ed. S. Brown, Edina, Mo.; W. T. Rutledge, Monroe City, Iowa, and S. E. Wallace, La Bell, Mo.

PORCELAIN WORK.

Porcelain work will be fully demonstrated by Drs. F. E. Roach, Chicago; W. L. Ellerbeck, Salt Lake City; Geo. T. Banzett, Chicago; W. H. Cudworth, Milwaukee, and Craig W. Work, Ottomua, Iowa.

Other clinics on various subjects will be given by Drs. W. L. Reed, Mexico, Mo.; J. B. Howell, Paducah, Ky.; C. L. Rose, Fargo N. D.; F. B. Lawrence, Elderado Kan.; Geo. D. Sitherwood, Bloomington, Ill.; A. Geiser, Davenport, Iowa; Fred Westerfield, St. Charles, Mo.; Otto J. Fruth, St. Louis; Richard Summa, St. Louis, and others.

EXHIBITS.

The following dealers have signified their intention to be present and display: S. S. White Dental Mfg. Co., Dr. Jenkins Porcelains, Klewe & Co., A. C. Clark & Co., St. Louis Dental Mfg. Co., John Nolde Dental Mfg. Co., Hisey Dental Mfg. Co., Denthal Chemical Co., Lambert Pharmacal Co., Lee S. Smith & Sons, Century Dental Laboratory Co., W. M. Berry Dental Laboratory Co., Sanitol Chemical Co., R. C. Brophy & Co., Keeton Williams Gold Co., Horlick's Food Co., Kress & Owens, Okland Chemical Co., McKesson & Robbins, and others.

RAILROAD RATES.

The Western Passenger Association and South Western Excursion Bureau have granted a rate of *one and one-third* fare, plus 25c validation fee, certificate plan, for this meeting, for the states of Missouri, Iowa, Minnesota, Kansas, Nebraska and Illinois, on and west of the line of the Chicago & Eastern Illinois Railroad.

HOTEL HEADQUARTERS.

At the Jefferson Hotel, Twelfth and Locust streets. Rooms for one, without bath, \$1.50 and up; rooms with bath, \$2.50 and up. Rooms for two, without bath, \$2.00 and up; rooms with bath, \$3.00 and up.

EXHIBIT SPACE.

Exhibit space may be obtained by application to the Secretary. If you have a clinic to give send your name at once to the Supervisor of Clinics.

A cordial invitation is extended to the profession to be present and assist in making this meeting, limited in scope but limitless in importance, the best ever held in this section.

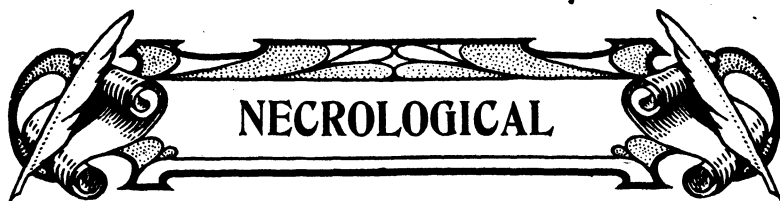
D. O. M. LE CRON, Supervisor of Clinics.

Missouri Trust Building.

S. H. VOYLES, Secretary.

306 Humboldt Building.

BURTON LEE, President.



NECROLOGICAL

DR. JOS. W. DOSTAL

Dr. Joseph W. Dostal, Chicago, whose funeral was held Oct. 8, was a graduate of Rush Medical College and the Chicago Dental College. He was 36 years old at the time of his death. His residence was 447 Thirty-seventh street. He left a widow and two children.

DR. BALSER HUBER.

Dr. Balser Huber, a young dentist of Warren, Ind., died in that city Sept. 29, as the result of an operation for the relief of appendicitis. Dr. Huber was stricken with the attack of appendicitis while lying low with typhoid fever, and could not rally from the nervous shock of the operation. Dr. Huber was twenty-four years of age. He was a member of a prominent family of Warren, and a promising professional career was predicted for him.

DR. CARLO B. STAPLES.

Dr. Carlo B. Staples was born in Williamsburg, Vt., Feb. 28, 1829, and died in Merrilan, Wis., Sept. 11, 1905, after a brief illness, aged 76 years 6 months. He studied for his profession in Boston and practiced dentistry; came west and settled in Wisconsin in 1850. He was married in 1856 to Abbie Hill. Six children were born to them, four of whom are living. He had been a resident of Merrilan since 1900.

DR. HENRY H BOULTER

Dr. Henry H. Boulter died Oct. 3 of yellow fever at Pensacola, Fla., where he had practiced dentistry during the last three years. He had planned to come north earlier in the summer, but was prevented from leaving by the quarantine, and last Thursday he was taken ill with the fever. Mrs. Boulter and their son have spent the summer at South Haven, Mich. Dr. Boulter was 53 years old and formerly practiced in Chicago and Highland Park. He was graduated from Hahnemann Medical college in 1884 and from Northwestern Dental college in 1886.

MISCELLANEOUS

EXPANSION OF RUBBER.

Red rubber expands more than pink rubber.—*Hints.*

TO CLEAN BURS.

Burs are easily cleaned, without dulling cutting edges, by being held against a revolving wheel of soft wood, such as is used for carrying pumice in polishing plates.—*Hints.*

PUMICE HOLDERS.

There is nothing better to hold pumice and peroxide of hydrogen, mixed to clean teeth with, than a round watch glass with thick sides at right angles to the bottom and about two and one-half inches in diameter.

BURNS FROM ACIDS

If you get carbolic acid on any surface where it is not wanted, apply absolute alcohol at once. If hydrofluoric acid, apply a strong solution of bicarbonate of soda. Never use these acids without having readily at hand some agent to stop their action immediately in case of accident.—*Review.*

EASY METHOD OF REMOVING REGULATING BANDS.

To remove regulating bands or crowns, grasp the band with forceps and squeeze with firm pressure, repeating the process around the tooth if possible. This will loosen the cement and may even expand the band so that it can be easily removed.—*F. W. Stephan, in Review.*

TREATMENT FOR PYORRHEA.

Cauterize the diseased sockets with the thermo-cautery, and then inject between the root and alveolus a solution of bichloride of proper strength in distilled water. This treatment supplemented by removal of deposits and firmly solinting the teeth to prevent mobility, is earnestly recommended by M. Barrie, of Paris.—*Register.*

DENTAL MANUFACTURERS TO MEET.

The Dental manufacturers of the United States and Canada are planning a mammoth exhibit of dental goods and appliances to be held in Chicago during the winter. An exhibit of this kind was

given in Philadelphia last year, and was viewed by thousands of dentists. The time and place are yet to be selected, but the meeting will be fully advertised.

MIRROR PROTECTION.

Place a moistened microscopic cover-glass upon the mouth-mirror. If the stone should mar it, it can easily be replaced, thus saving your mirror many a scratch.—*Elliott's Quarterly*.

LOSES FILLING AND FINDS PEARL.

This month while eating clams at a Chicago hotel a man bit upon a hard substance and broke off an inlay and part of a tooth. He did not sue the management for damages, however, as the hard substance was a valuable pearl in the clam.—*Digest*.

THE SURGEON IN DENTISTRY.

The surgeon often performs operations purely within the dental province, yet receives financial consideration decidedly in excess of what the dental practitioner might hope to obtain.—*Dr. B. J. Cigrand, Register*.

CHINESE WOMAN GRADUATED IN DENTISTRY.

Among the graduates of the dental department of the College of Physicians and Surgeons, San Francisco, Cal., was Miss Faith Sai So Leong, a Chinese lady. She enjoys the unique position of being the only Chinese woman entitled to practice dentistry in this country.—*Summary*.

INSTRUMENT FOR SCALING TARTAR.

For the removal of these deposits I have selected the most suitable instruments from the many sets found in the dental supply houses, my choice being the Younger set improved by Dr. Good, the Mawhinney, and some of Dr. D. D. Smith's set.—*Dr. F. A. James, Review*.

SCALING TEETH.

The use of iodine to soften and stain the deposits will facilitate their removal. It is also disinfectant. Should the gums and periodontal membrane be hypersensitive, the application of a cocaine solution in adrenalin, or an equivalent, will greatly relieve.—*Review*.

BRITTLE GOLD ALLOYS.

As disagreeable experiences are had at the mints from time to time with brittle gold alloys, the subject has again been taken up by chemists. Tests have confirmed the fact that lead, iron and tellurium must be avoided, as they act injuriously upon the properties of gold even in the smallest quantities.—*Hints*.

BAD TEETH CAUSE CANCER.

Walter Whitehead, the well known Manchester surgeon, believes it possible that cancer may be due to bad teeth. Addressing the students of the Victoria Dental hospital the other day, he said, that to drain, trap and ventilate a house for a man with bad teeth was waste of money, for he polluted the purest air as he breathed it, and contaminated the most wholesome food as he ate it.—*London Paper.*

A GOOD COATING FOR PLASTER CASTS.

To four ounces of sulphuric ether, add two ounces of collodion and two ounces of "silver gloss." The latter may be obtained from dealers in painters' supplies and is put up in one-ounce packages. Let the mixture stand for about 48 hours, and shake well before using. Apply with a camelhair brush and keep in a well corked bottle. This will give a beautiful glossy surface to casts.—*Dr. J. F. Steele, Eagle Grove, Iowa.*

PRESSURE ANAESTHESIA.

Instead of using a liquid solution of cocaine, I make a paste of cocaine and glycerin and place it in the cavity after getting as nearly an exposure as possible. I use a piece of unvulcanized rubber that will more than fill the cavity, and finger pressure as pain decreases.—*Dr. L. N. Rudy, Cosmos.*

ARGYROL FOR PUS POCKETS.

When pus pockets are found after removing deposits and they have been syringed with warm water, a 20 per cent solution of argyrol is used, freely injecting the solution into the pockets. The argyrol is a thorough non-irritating disinfectant and invariably prevents soreness following the surgical treatment, and is the only drug I find necessary in the treatment of pyorrhea aside from a good mouth wash for continuous use.—*D. A. F. James, Review.*

A STERILIZER MUST BE SOLUBLE IN WATER.

I am inclined to make this dogmatic statement: to sterilize a cavity by the side of a filling, in which you are about to make a repair you must sterilize with something that is absolutely freely soluble in water and that will destroy not only the micro-organism itself, but the spore, and if you do that you have a fairly good opportunity to preserve that tooth from any further invasion.—*Dr. A. W. Harlan, Items.*

FALSE TEETH FOR A MIDGET.

Dentist Oscar Adelberg, of Elizabeth, N. J., has just completed a set of false teeth which is probably the smallest ever made. The

set is intended for Baroness Magri, known to the world as Mrs. Tom Thumb. The set can easily be placed within the circumference of a half dollar. She is greatly pleased, and takes delight in showing the plate to her intimate friends.—*New York Journal*.

DECORATION FOR DOCTOR KIRK.

Dr. E. C. Kirk, dean of the Dental Department at the University of Pennsylvania, has been granted by the French government the decoration of Officer d'Academie. The decoration, which was forwarded to Dr. Charles Gordon, honorary president of the Federation Dentaire Internationale, consists of a violet ribbon and a silver wreath.

A NEW PORCELAIN FURNACE.

The Roach Automatic Pyrometer Furnace is the name of a new furnace just introduced with the following claims: "Eliminates entirely the possibility of over or under baking porcelain." "Fuses every time correct to color." "Can be operated by any laboratory assistant." "Automatically cuts off circuit when the inlay, crown or bridge is properly fused." "Watching of furnace is unnecessary." "It revolutionizes the fusing of porcelain and removes the greatest difficulty connected with porcelain work." For the benefit of porcelain workers we trust all of these claims can be substantiated.

SYRINGE NEEDLES.

Should needle, for any reason, become plugged, fill it with alcohol and light the alcohol at a gas flame or with a match. This will promptly get rid of the obstruction. Buy only well-made needles and see to it that you *put the wire back every time it is used*. Boil the plugged needle with washing soda. Keep plenty of needles on hand.—*Alk. Clinic*.

REMOVAL OF AMALGAM.

Dr. Ottolengui alluded to his method of removing amalgam fillings from the teeth by dividing. My method has been, if the tooth were a lame tooth, I mean if the periosteum were sore, to make a little well in large amalgam fillings, fill it with mercury almost up to the surface, and then to put a little oxyphosphate cover over that. Allow it to remain for a day and have the patient come back and a bur will remove that filling readily.—*Dr. W. P. Richard, Items*.

LOCAL OBTUNDENT.

Melt together in a test tube equal parts of menthol and cocaine, and add an equal amount of carbolic acid. Keep in a well-stoppered

bottle. Before applying the solution to the dentine, wash the cavity with a warm alkaline solution and dry with alcohol and warm air. The lotion may also be used agreeably when scaling teeth or fitting crowns and bands.—*Dental Era*.

USE OF MENTHOL IN PYORRHEA CASES.

Sometimes in operating for pyorrhea the tissues are sensitive. It may not be advisable in a given case to employ cocaine on account of contra-indications. In such cases pack the pyorrhea pockets with menthol crystals a few minutes in advance of the operation. It will be found a great relief to the patient, and is in every way a more pleasant application than cocaine.—*Dental Review*.

PORCELAIN BRIDGES.

For lower bridges a round 14-gauge iridio-platinum bar should be bent to conform closely to the ridge, extending a second bar straight across from abutment to abutment, re-enforcing with a small brace between, building porcelain around this so that it will cover the bar and rest snugly upon the gum. This will result in a more hygienic bridge and one that will not irritate in the least, the tissues taking much more kindly to porcelain than to platinum.—*Dr. F. E. Cheeseman, Era*.

REMOVING AN AMALGAM FILLING.

To bur out or drill out an amalgam filling with constant syringing out of the debris is a trial to both patient and operator. I use a spear pointed drill, made sharp for the purpose, and I prefer a drill because it cuts rapidly and does not clog, as a bur does. I drill a hole into the filling at the median line; by moving the drill back and forth as it cuts, I make this a slit. This slit is continued until the filling is actually divided into halves. One easily tells by the sense of touch when the drill passes beyond the amalgam and reaches the dentine, when, of course, drilling in that particular direction is stopped. The filling thus cut in half, is easily removed in two pieces, by pressing each piece towards the center thus dislodging it.—*Dr. R. Ottolengui, Items*.

RADICAL TREATMENT.

You have heard of the salt treatment, but I am going to give you a more radical one. A gentleman came to my office whose pocket-book was light. He is a good friend of mine. He got out of my hands for two or three years and came back with the six sockets of the lower front teeth nearly gone. I told him that the best thing

for him to do was to get those out and have a bridge. He wanted to know if the teeth could not be saved and I said yes, I would fill them full of sulphuric acid and see what that would do. I took pure sulphuric acid and filled in around the teeth, with the result that those teeth are in there yet.—*Dr. J. N. Crouse, Review.*

PORCELAIN IN LARGE LABIAL CAVITIES.

In this class of cavities I have found that an impression can be readily and accurately made in the following manner: First, make a die by pressing a soft piece of impression compound into the cavity tightly. Harden under a stream of cold water and remove. Then place the platinum over the cavity, holding loosely, and with another piece of compound gradually force to the bottom. By careful manipulation this can be done without breaking the platinum. Insert the die, which will adapt the impression at every point. Remove the die, and burnish the edges, either before or after the first bake, according to the operator's individual method. This can also be used to advantage in other large cavities easy of access.—*Dr. Chas. A. Turner, Cosmos.*

REMARKABLE TREATMENT.

A Colorado doctor whose patient when on the operating-table for a laparotomy became cyanotic and practically moribund (heart and respiration had both ceased) passed "one hand up along the anterior wall of abdomen and grasped the heart through the diaphragm; the other hand was placed over the precordial region and mechanical contraction of that organ made sixty times per minute. Pulse returned in half a minute and the operation was finished under ether. Patient lives without bearing signs of this remarkable treatment.—*Alk. Clinic.*

BRIDGE WORK INJURIOUS.

Does bridgework injure the teeth that are used as posts? I am afraid it does—in fact, I know it does in some cases. I once removed a bridge of four upper incisor teeth from a lady's mouth which destroyed the two canine teeth to which it was attached. They were two finely developed teeth, with good long roots firmly imbedded at one time in the process, but now entirely loose, and from appearances ought to have lasted a lifetime. A large amount of absorption had taken place, with a highly suppurative condition of the soft tissue, accompanied by continuous pain. It was otherwise a clean, healthy mouth, and there was no apparent cause for

such a wreck. I removed the bridge with the teeth clinging to it, and saw the lady no more; but I must confess it left me in doubt as to the success of all bridges. I could see no cause why this one should prove such a failure. But a failure it was, with the loss of the two cuspid teeth.—*Era*.

TO MAKE A NICE PINK GUM.

If you want the pink gum to be an equal distance from the necks of teeth so as to show a well-defined line instead of an irregular or hit or miss line between the pink rubber gum and rubber above it that is used in the plate, invest the waxed-up model, in part of flask that hold model, only as high as you wish the pink gum wide. Pack pink rubber after separating as high as your investment in front. If you have invested so as to get a well-defined line your pink gum will show a defined line also.—*Summary*.

WEARING OUT OR RUSTING OUT.

An old adage says, "It is better to wear out than to rust out," but a good many who fully appreciate the truth of this are really "rusting out," without knowing it. They are in a rut where they plod along day after day, following the same rules of practice and using the same class of appliances with which they were equipped when first licensed to practice. The "rust" is corroding the metal of their ability deeper and deeper every day, and fondly believing they are "wearing out" in an honest endeavor to do the best they can, they make no effort at self-analysis and never attain an appreciation of the difference between "rust" and "wear."—*Pacific Gazette*.

ARRANGING ARTIFICIAL TEETH.

Artificial teeth are usually arranged so that when placed in the mouth they look so uniform and regular that a natural effect is not produced. This should be avoided, because the natural teeth in the mouth are never perfectly uniform. A slight irregularity of two or more teeth adds much to the natural effect that should be produced in artificial dentures, and those who insert them should recognize the importance of the arts as well as the mechanics in prosthetics. Two cases precisely alike cannot be found, and cannot be treated the same with good results in each. We must treat each individual from an individual standpoint. When trying in a plate before vulcanizing, note the effect that a little rearrangement will produce and in this way good results may be attained.—*Review*.

THE VILLAGE TOOTHSMITH OF BYGONE YEARS.

A LONG WAY AFTER LONGFELLOW.

["Dental surgery had made enormous advances since his boyhood, when, he remembered, the following announcement appeared over the entrance to a blacksmith's forge which he once visited, 'Tooth-drawing, bleeding, and cupping done here.' The instrument used was called a pelican, and had, a strong, sharp, hooked beak."—The late Mr. J. W. Hulke, F. R. S., at a Dental Hospital dinner.]

Under the spreading gum-tree's shade
The village smithy stands,
The smith a busy man is he,
For when frail flesh demands,
He cups and bleeds and pulls out teeth
With his large and sinewy hands.

Week in, week out, from morn to night,
You may see his clients there,
Bound hand and foot to the anvil—
For he owns not any chair—
Squealing, squirming, as he swings
The pelican in the air.

Its beak is sharp and hooked and strong
To stir the stumps of man ;
You shall not see so weird a thing
From Crewe to Matapan ;
They look the whole world in the mouth,
He and his pelican.

The children coming home from school
Look in at the smithy door ;
They love to see the pelican
And hear the patients roar,
And catch the double teeth that fall
Like hailstones on the floor.
(Cetera desunt).

—*The Dental Surgeon, London.*

Personal and General

Norton-Ackerman.—Dr. Ira P. Norton and Miss Blanche Ackerman, both of LaPorte, Ind., were married at LaPeer July 9.

Young-Guthrie.—Dr. John K. Young of Cambridge, Ohio, and Miss Hetta G. Guthrie, of Bloomfield, were married September 20.

Sohm-Troja.—The engagement of Dr. Albert Sohm of Quincy to Miss Lydia Adelaide Troja, of Ft. Madison, Ia., is announced, the marriage to take place October 18.

Injured by Gas Explosion.—Dr. S. H. B. Cochrane of Columbus, O., was severely burned about the face by explosion of gas caused by leak in rubber hose.

Dentist Weds Dentist.—Dr. Florence De Shazo and Dr. Woodward, both of Cincinnati, and both dentists, were married September 27 at the home of the bride.

Vermiform Still Busy.—Harris—They tell me you have had a very narrow escape from death. Spurr—Yes; they were going to operate upon me for appendicitis, but they discovered in time that I hadn't the money to pay for it.

Reassuring.—Doctor—Well, how does the eye feel this morning?

Patient—It's exceedingly painful, doctor. I'm afraid I'm going to have trouble with it.

Doctor—Oh, don't worry; it will come out all right.

Married.—Melvin W. Myler, a senior dental student in Iowa University, who last spring won the low hurdles at the state field meet at Des Moines, and who is a candidate for football honors this fall, was married to Miss Mary Ballard, who graduated from the University last June.

Accidentally Killed.—Dr. W. N. Nelson, who formerly practiced dentistry in Richmond, Ind., was killed October 7 at Sheridan, Ind., by the explosion of condensed milk sterilizer being tested by the doctor, who was president of the Indiana Condensed Milk Co.

Change in Michigan State Board.—Gov. Warner of Michigan announces that he will appoint Dr. A. L. LeGro, of Three Rivers a member of the board of examiners in dentistry for three years commencing November 12, 1905. He will succeed Dr. Charles J. Gray, of Petoskey, and will become secretary of the board.

Naturally.—Jonathan—Silas is dead. Went to ther city ter git a tooth pulled and ther dentist told me he'd better take gas first.

Postmaster—Gave him an overdose, eh?

Jonathan—No. After ther dentist told him that he went back ter his boarding-house an' took ther gas himself.

Doll Dentists.—The very latest is a doll's dentist. One of the doll hospitals in the shopping district now advertises that it has an expert and is prepared to do any kind of dentistry required by any doll. The next will probably be doll massage parlors and doll manicure establishments.—New York Sun.

Engaged.—The engagement is announced of Miss Annie M. Usinger of Alameda, Cal., and Dr. Rufus Forsythe McFarlin, of Oakland. Dr. McFarlin is a rising young dentist of Oakland and a very popular member in the profession. The wedding is to occur this winter and the McFarlin home will probably be established in Piedmont.

Dentist Sued for Damages.—The \$5,000 damage suit of Mrs. Veronica Odenthal against Dr. Sylvester E. Earhardt, a dentist, at Indianapolis, Ind., was tried before a jury in Judge Carter's division of the Superior Court October 3. Mrs. Odenthal says she was injured by an electric fan which fell upon her while she was seated in the dentist's chair.

Robberies.—The following dentists were robbed since last issue: Drs. Lewis Kraft, Collinsville, Ill., loss \$30; A. L. Sickler, Port Huron, Mich., loss not given; the two dental offices in Rockwell Ia., loss \$700; H. V. McGregor, Atlantic, Ia., loss \$60; A. A. Welch and Roy Alvord, Butter Creek, Mich., loss \$150; W. H. Dwight, Le Mars, Ia., loss \$25; B. F. Gilmer, Denison, Tex., loss not given.

Partnership.—Dr. F. A. Weld of Bellvidere and Dr. John Bowe of Chicago have entered into partnership at the former place. Dr. Weld has been in practice in Bellvidere for a number of years and Dr. Bowe is a recent graduate of the Northwestern University and a son of "Charlie" Bowe, the popular manager of the Chicago branch of H. W. Justi & Son.

Dental Salesmen Organize.—The dental salesmen of the United States have organized the National Association of Dental Salesmen. The officers are: President, C. A. C. Kelly, Buffalo; vice-president, Charles J. Hood, Pittsburg; secretary, Edwin R. Davis, Buffalo; treasurer, C. Guy Calder, Pittsburg; directors, L. M. Beardsley of St. Louis, Oscar Beig of Philadelphia, Frank Mills of New York city, H. G. Stephens of Kansas City, N. M. Stackhouse of Buffalo.

Woman Dentist to Go to Europe.—Dr. Gillerte Hayden, one of the five women dentists in Columbus, O., has just received an offer from Dr. R. D. McBride, of Dresden, Germany, of the position of associate and specialist in oral prophylaxis with Dr. McBride. Dr. McBride, who is associated with Dr. N. S. Jenkins, of world-wide renown, is said to have the finest and most thoroughly equipped dental office in Europe, and numbers royalty among his patrons.

Charges of Fraud in Evans Estate.—Heirs of the \$3,700,000 estate of Dr. Thomas W. Evans the American millionaire dentist who died in Paris in 1897, are charged by Assistant City Solicitor Joseph W. Catherine at Phila-

delphia with making fraudulent assignments of their property, with the result that many new creditors have sprung up who demand settlement at once.

Charges of fraud and graft are brought by one portion of the heirs against the other, and against the executors by creditors, until the affairs of the estate are so hopelessly mixed that it is doubtful if a settlement can be reached in several years.

The latest charges of fraud are brought by creditors of the estate who have become creditors since the death of Dr. Evans through the assignment of claims to them by the heirs.

Shock From False (Testimony) Teeth.—"False teeth have been known to generate electricity in the mouth and shock their wearer painfully," said a physician.

"Only last week a man came to me and said he feared he was getting a cancer on his tongue. 'Such severe shooting pains attack me,' he said, 'that often I utter loud oaths in the most unseemly places—at teas before the minister and so on. It is like knife thrusts. Do you think I am going to lose my tongue?'"

"I found that two different metals had been used in fixing the poor man's false teeth. These metals, combining with the saliva, had formed a small battery. Electricity generated in the battery continually, and shock after shock was administered to the tongue.

"I painted the metals with insulating varnish. Thereafter the man had no more trouble."—Denver Post.

REMOVALS.

Dr. Evans, from Pontiac, Mich., to Milford, Mich.; Dr. W. A. Coston, from Fort Scott, Kan., to Topeka, Kan.; Dr. E. D. Hatch from Fairchild, Wis., to Eau Claire, Wis.; Dr. Younie, from Sugar Grove, N. Y., to Forestville N. Y.; Dr. John Buasen, from New Ulm, Minn., to Fargo, N. D.; Dr. C. F. Meng, from Henry, Ill., to DePue, Ill.; Dr. R. E. Raymond, from Waldron, Ind. to Louisville, Ky.; Dr. M. L. Brown, from Milton, Wis., to Janesville, Wis.; Dr. Frank Higby, from Bradgate, Ia. to Bode, Ia.; Dr. Gladson, from Lovilia, Ia. to Knoxville Ia.; Dr. W. C. Penrose from Chicago to Lamoine, Ia.; Dr. L. S. Hutchison, from Decorah, Ill., to Elgin, Ill.; Dr. W. H. Hanning from Lafayette, Ind., to Terre Haute, Ind.; Dr. A. J. Dix, from Mitchell, S. D., to Sioux Falls, S. D.; Dr. R. W. Smith, from Baltimore, Md., to Anniston, Ala.; Dr. A. W. Gaumer, from Columbus Junction to Bloomfield, Ia.; Dr. Bruner, from Sioux Falls, Ia., to Fort Dodge, Ia.; Dr. G. W. Grant, from North Adams, Mass., to Bucyrus, O.; Dr. J. A. Price, from Savannah, Mo., to Weston, Mo., Dr. Stanley Eakin, from Canton, O., to Portland, Ore.; Dr. G. L. Hiller, from Bucyrus, O., to Circleville, O.; Dr. Hayden, from Columbus, O. to Dresden, Germany.

PATENTS

799,972. Dental Chair. Frank E. Case, Canton, Ohio. Filed Aug. 7, 1903. Serial No. 168,555. Fig. 1.

Claim.—1. In a chair-pump, a block having a reservoir therein and an aperture in the top, a cylinder in the reservoir, a spring-sustained plunger adapted to operate in the cylinder and having a bell-flange on its upper end adapted to operate in the aperture and around the cylinder, a yoke having a bearing on the plunger, a rock-shaft mounted on the block and having lateral arms, and connections between the yoke and the arms.

2. In a chair-pump, a block having a release-tube therein, a spring-closed valve in the tube, an endwise-movable pin protruding from the tube and abutting on the valve, a bell resting on the pin and freely telescoping over the tube, trunnions on the bell, levers pivoted on the block and curving over the trunnions, and means for depressing the levers.

799,724. Dental Tool. Adam W. Feltmann, Chicago, Ill. Filed Dec. 27, 1904. Serial No. 238,313. Fig. 2

Claim.—1. In a tool for the purpose indicated, in combination with the exterior element or barrel, a plunger reciprocating in the barrel and having gripping-jaws which are operated by such reciprocation, and a ratchet-threaded connection between the plunger and the barrel, one of whose elements is elastically yielding with respect to the other for disengagement of the threaded connection.

2. In a tool for the purpose indicated, in combination with the exterior element or barrel, a plunger reciprocating in the barrel and having gripping-jaws protruding therefrom which are operated by such reciprocation; a spring reacting between the plunger and the barrel for yieldingly resisting the longitudinal movement of the plunger in one direction, and two elements constituting a threaded connection between the plunger and the barrel, one of said elements being rotatable for longitudinally moving the plunger, and one of them also being movable for disengagement of the threaded connection to permit such longitudinal movement independently of the threaded connection.

800,981. Air-Blast Attachment for Dental Engines. James W. Buchanan, Savannah, Ga. Filed Oct. 29, 1904. Serial No. 230,553. Fig. 3.

Claim.—1. In a dental engine, a drill-operating shaft, a fan driven thereby, a casing housing the fan, and a discharge-nozzle communicating with the casing.

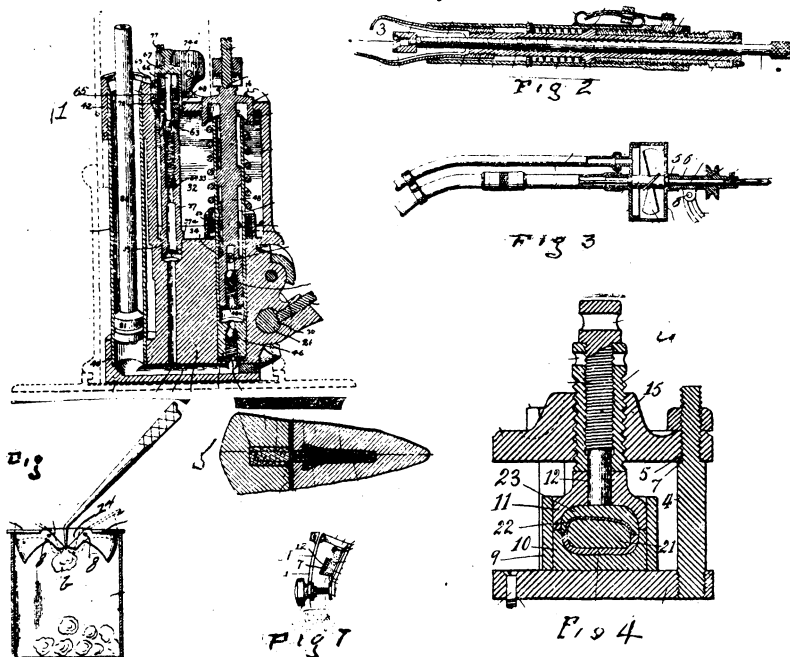
2. In a dental engine, the combination with a drill-operating shaft, of a fan carried thereby, a casing housing the fan, and a discharge-nozzle in communication with the casing.

3. In a dental engine, the combination with the shaft-bearing, of a casing secured thereto, a fan arranged in the casing and having a hollow shank.

projecting through the bearing, a sheave mounted upon the shank, a drill-operating shaft projecting through the shank, and means for connecting the sheave shank and operating-shaft.

799,937. Dental Crown or Plate Swaging Device. Joseph A. Reid, San Francisco, Cal., assignor, by mesne assignments, to Century Dental Instrument Company. Filed Feb. 5, 1904. Serial No. 192,248. Fig. 4.

Claim.—1. In an apparatus of the character described, in combination with the upper and lower mold-sections and the die therein, a thin sheet of soft metal, placed over the metal plate to be swaged upon said die, and means for forcing the sheet down upon the die, said means comprising plastic material within the upper mold-section, and a plunger for forcing down said plastic material, substantially as described.



2. In an apparatus of the character described, in combination with a shell, the upper and lower mold-sections therein, the die, the thin sheet of soft metal shaped over the die to form a counter-die, the plastic material in the upper mold-section, and means for applying pressure to said plastic material, substantially as described.

800,093. Dental Device. William S. Filley, Montpelier, Ohio, assignor of ten-elevenths to John J. Sim, John C. Parnell, Robert B. Dickerson, John C. Barger, James T. O'Bryan, Charles M. Boyd, James D. Hill, William A. Saunders, H. G. Mann, and Chester W. Brannon, Montpelier, Ohio. Filed Nov. 5, 1904. Serial No. 231,529. Fig. 5.

Claim.—1. A dental device comprising a pin having a flattened shank, flanges on the edges of the shank extending above the shank, the said shank being slotted, and a leaf-spring extending through the slot and lying on opposite sides of the shank between the flanges.

2. A pin comprising a wedge-shaped, flattened shank, flanges carried by the edges of the shank and extending above the upper end of the shank, a connecting-flange along the upper end of the shank, and a detachable spring forming wings upon opposite sides of the shank.

800,498. Dental Waste-Cotton Receiver. Lyman L. Sheffield, Toledo, Ohio. Filed July 1, 1905. Serial No. 267,899. Fig. 6.

Claim.—1. In a waste-cotton receiver, a cylindrical receptacle, and two spherical wedge-shaped members pivoted upon said receptacle and weighted at their outer ends to normally close the same substantially as described.

2. In a waste-cotton receiver, a cylindrical receptacle, and two spherical wedge-shaped members pivoted upon said receptacle and detachable therefrom, substantially as described.

801,056. Dental Matrix. Frederick E. Andersen, Red Wing, Minn. Filed Dec. 27, 1904. Serial No. 238,289. Fig. 7.

Claim.—1. The combination of a dental matrix with a pair of spreader-bands, a turnbuckle positioned between the outer ends of said bands, and means for supporting and adjusting said parts.

2. An appliance of the class described, comprising a matrix carried by a frame, a pair of spreader-bands attached to said frame, a second frame pivoted at its angles and to the outer ends of said bands, and means for adjusting said frames, and separating said bands.

FOR SALE.

Dental practice of \$3,500, with or without furniture; 70 miles of Chicago; city of 3,200; bargain for one who wants business. Address L. H. W., care American Dental Journal, Chicago, Ill.

FOR SALE.

Outfit at a bargain; established ten years. Wish to retire on account of old age. Good place for a single, competent dentist. Population 21,000. Address Dr. M. E. Tavern, 111½ Main St., Muskogee, Ind. Ter.

INDEX TO ADVERTISEMENTS.

	Page
American Hard Rubber Co., New York	18
Acestoria	10, 11
Adrian Spear Rutherford	37
American Cabinet Co., Two Rivers, Wis.	16
Antidolar Mfg. Co., Springville, N. Y.	19
Antikamnia Chemical Co., St. Louis	25
"Bargains"	26, 27
Blair Dental Mfg. Co.	26
Burkes Dental Specialty Co.	25
Buffalo Dental Mfg. Co.	1
Carborundum Rubber Disks	38
Caulk, The L. D. Co., Philadelphia, Pa.	32
Chicago College of Dental Surgery, Chic go, Ill.	45
Clark, A. C. & Co., Chicago	68
Croselmirre & Ackor Co., Newark, N. J.	35
Crocker, Samuel A. & Co.	47
Dayton Dental Supply Co., Dayton, O.	35
Dee, Thomas J. & Co., Chicago, Ill.	34
Dental Suction Co., Loudonville, O.	25
Dentist's Card Account System.	47
Dentists Supply Co., New York	55 to 64
Donaldson Flask	7
Electric Sterilizer Co., St. Paul, Minn.	44
Goldsmith Bros., Chicago, Ill.	24 and Outside Back Cover
Dr. Green Chemical Company, Ionia, Mich.	43
Hall & Ruckel, Seozodont	00
Dr. Hare's Dental Device Co.	30
Higgins Dental Mfg. Co., Bellevue, O.	14
Hisey Dental Mfg. Co., St. Louis, Mo.	38
Hull Carbulated Dental Disk	53
Ideal Chemical Co.	45
Indiana Dental College, Indianapolis, Ind.	44
Ivory's Specialties	31
Jennelle Chemical Co.	19
Kirkwood Mfg Co.	17
Kress & Owen Co., New York	00
Lambert Pharmacal Co., St. Louis	0
Lauderdale Crown System	51
Lavoris Chemical Co., Minneapolis, Minn.	12
Louisville Dental Laboratory & Mfg. Co.	50
Michigan Drug Co.	53
Morgan, Hastings & Co., Philadelphia	18
Mounted Carborundum Points	50
National Dental Improvement Co., Mt. Vernon, O.	30
Neima, Henry & Sons, Philadelphia, Pa.	67
Oakland Chemical Co.	Second Cover
Paragon Dental Mfg. Co., Racine, Wis.	28
Pelton & Crane	9
Pustolene, J. A. Sprague	46
Randall Falchney Co.	36
Ritter Dental Mfg. Co.	20
Santol Company	2, 3
Scharmann, Gustav, New York, N. Y.	15, 21
Schenkenberg, Eugene, Racine, Wis.	40
Smith Lee & Son., Pittsburg, Pa.	13
Soap, Stone	46
Sunnof rme, E. de Trey & Sons, New York.	65, 66
Standard Dental Mfg. Co., New York	33
Sterion White Alloy Co., Chicago, Ill.	39
Strout, J. M., Portland, Maine	25
Tenax	44
Teague Supply Co., Augusta, Ga.	54
Twentieth Century Teeth	55 to 64
University of Illinois	22 23
Webster Dental Co., Buffalo, N. Y.	41
Wedglock Tooth Co.	29, 49
Windsor Dental Company, Chicago	18
Williams J. A.	40, 42

